

POPULAR Computing WEEKLY

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6-12 November 1986

Vol 5 No 45

NEWS DESK

Sugar raises price of Amstrad PC
- entry level 1512 now over £500

Tandy hits software problems on its PC

IJK denies piracy claim by Mastertronic



Star Trek



Special preview
Star Trek - the
Rebel Universe
see page 14

HARDWARE

- Designer joysticks
- Disciple - new Spectrum interface
- The Omnireader

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Editor Christine Eason News editor John Lillis Features editor John Cook Technical editor Duncan Pavis Production editor Michelle Rowland Supporting Supplements editor Christopher Jenkins Development designer Barbara Hall Advertisement and Promotions manager Simon Langdon Assistant advertisement manager David Dean Advertisement executive Jan Butler Classified executive Robby Woodley Editorial secretary Annette O'Driscoll Administration Executive Bryan Manning editor Peter Woodcock Publishing director James Innes/ Published by Sunshine Publications Ltd, 10-18 Little Newport Street, London WC2H 7PP. Tel 01-437 4343 Telex 250376 Fax 01-439 0861/ Typeset by Magazine Typesetters, 8 Parrot Court, East Pottery, Andover, Hampshire. Printed by McCorquodale Magazines, Andover, Hampshire. Distributed by BSI Distribution, London SW9B. Tel 01-274 8811, Telex 261645. © Sunshine Publications Ltd 1988. ISSN 0263-0909

Popular Computing Weekly. Tel: 01-437 4343.

ABC

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Amstrad: a Yen to raise prices



More money for value . . .

AMSTRAD has celebrated its 300,000th PC order with a price increase averaging 12 per cent on the range. The new price range from £529 for the monochrome single floppy machine to £1,266 for the colour machine with 20Mb hard disc.

The price rises technically don't come into effect until January, but as orders placed now won't be delivered until after that it's unlikely that anybody ordering now will be able to get a machine at the old price.

Amstrad puts the price rise partially down to the strength of the Yen, which

has forced the cost of its Japanese components up to 20 per cent. Prices of the other Amstrad machines have not been increased, however. A spokesman suggested that this was because the components were different.

Japanese sourced components are, however, unlikely to make up much of the total production cost of the machines, as Amstrad manufactures in Britain and uses components from a variety of countries in all its machines. The main Japanese input in the PC will, therefore, be the more complex of the chips,

and possibly some disc drives. The lower tech memory and raw materials will generally come from countries like Taiwan, Korea and Malaysia.

Demand was, however, another factor in the decision to raise prices. Advance orders have already exceeded

Amstrad's predictions for sales this year, but have been more heavily loaded towards the hard disc machines than the company expected, and have almost certainly formed sales of the PCs. The price rise, therefore, has the effect of taking some of the heat off the PCs.

Apple's new UK show

A couple of weeks ago *WTOOL*, in a preview of Apple's new *8025*, said that the UK company was lacking in initiative compared to the American parent.

Take it back.

The change of heart has been brought about by the AppleWorld exhibition and

conference in London last week.

There was more of the claustrophobia or righteously casual associated with computer fairs, instead, as you'd expect from Apple, the show was cool and very stylish.

Star of the show was the 1025 running some very impressive sound and graphics demos.

But the bulk of the exhibition was supporting the Mac. Arranged in four sections covering education, business, communications and desktop publishing, the show saw the launch of a couple of new products.

First was Microsoft Works,

an integrated software package in direct competition with Lotus's *Jazz* offering word processor, spreadsheet, graphics, database and camera for £250.

The second launch was of Apple's Tair's first Mac product, a version of *dBear* (no price yet).

Other interesting stuff included additional screens giving 1024 x 1024 resolution, colour laser printers, and the ultimate computer printer, a Lineator 100, giving a resolution of more than 1,000 dots per inch.

Not the kind of stuff that most of us can afford, but we can dream, can't we?

Peter Warwick

Atari repays development grant

ATARI has repaid grants worth £2.6 million to the Irish Industrial Development Agency after its failure to complete work on a computer factory in Limerick. The factory was originally planned when Atari was owned by Warner Brothers.

Work was abandoned on the factory following Jack Tramiel's takeover two years ago. Atari currently produces most of its income in Taiwan, although Tramiel has in the past expressed his intention to manufacture in the US.

Dedicated games

CDS Software is getting into the hardware market, and is to sell a range of hand-held and table-top games machines from Systems. The range includes dedicated chess and bridge machines, and also extends to draughts, backgammon, Reversi and Four-in-a-Line. Prices start at £78.95 and go up to £199.95 for the Turboaster chess machine.

Due to the Popular printer copying out at the last minute, the last 13 lines of Ken Smith's *Miss* program were omitted when it was published.

So, here they are below. Also, you can still obtain a copy of the game direct from Ken.

21439	007410	99	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000		
21440	007420	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	
21441	007430	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21442	007440	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21443	007450	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21444	007460	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21445	007470	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21446	007480	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21447	007490	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
21448	007500	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000

Trouble for Tandy's PC

TANDY'S new computer PC, the 1000EX, has run into compatibility problems. The machine does run most industry standard applications programs, but its attitude in the games market is not so clear cut, and embarrassing for Tandy if not I see one of the games Tandy intends to sell alongside it.

The problem with the game, *Master*, seems to relate to the Tandy's conventional keyboard. *Master* will load into the machine, which is probably why it got through Tandy's checking procedure, but as you can't use the cursor keys you can't get past the second screen.

Other games are similarly difficult. Sublogic's *Jet* does work after some investiga-

tion, but instead of the throttle controls being the plus and minus keys as normal they're cursor right and cursor down. Microprose's *F-15 Strike Eagle* has a nasty problem with the toggle between front and rear view (once you've done it once it keeps doing it) while *Boatler Dash* and *Boatler Dash II* again have cursor problems.

Some of these games will be playable with a joystick, as unlike the Amstrad PC the Tandy has a PC standard joystick port, and therefore even if the keyboard won't work the joystick should.

Tandy is meanwhile supplying Activision with a 1000EX, in an attempt to identify the problem with *Master*.



The Tandy 1000EX

British games tilt at French awards

BRITISH software has been winning European awards recently - Palace Software's *Cavalier II* took the *Ed* award for the best game of the year. He is the leading French games magazine, and its readers are obviously *Cavalier* fans: last year the accolade for the best computer arcade-adventure award to *Cavalier II*.

Golden Graphic's May of the Tiger also won one of the *Ed* awards (for the best Amstrad game of the year), so did US company Microprose's *Strike Eagle*, available in the UK through US Gold.

Ed also awarded a 'Golden Tier to Alex Sinclair's *Power*, the highly acclaimed graphics adventure published by *Quintet*, for the quality of its graphics. The *Ed* has also named adventure awards from the *Computer*, *Magazines*, *Happy Computer*, and *Ed*'s.

Software Hotlines

English Software, well-known mainly as a company still producing titles specifically for the Amstrad line, turns its attention to the Amstrad CPCs and the ST for its next two releases.

Goal, for the ST, may sound like a Snooker game, but not if you talk to **English boss Philip Morris**. "Well, no, it's not exactly Pool or Snooker, but you'll have all the balls on screen - they'll all move independently - and you'll be able to view it from any angle."

Made of that what you will - a cross between Pool and a Heron's *Crack* - and watch this space for further clarification.

On the Amstrad CPCs **English** is converting *BlackSide*, the racing game with a somewhat surreal touch. It should be out in a week or so at £9.95 (tape), £14.95 (disc). Also, *Popul* will be running an *Interactive* competition next week to keep your eyes peeled.

MicroGen's latest, *CopyCat*, a shoot-'em-up, gets a thorough play test at the final of **MicroGen's** National Computer Games Championships, being held this week at the Revoy-Gall in London.

More championships from **GDS**, the publisher of *Colosseum Chess*, which is sponsoring a Chess competition under the auspices of the British Chess Federation, Junior Division, and BBC's *Chess* service. Contestants are be-

ing picked through secondary schools.

The big surprise about **Analese's Zepto**, a fast action shoot-'em-up (this one's computer eye advertised a slow-action shoot-'em-up) is that it's got nothing to do with the namesake Jeff Meier. Coming out on **Analese's Resonator** label next month, it mainly comprises blasting everything in sight to bits in a state of suppressed panic.

It is now a well known fact that **Geoff Crossland's Sentinel** (to be released on BBC II and Commodore \$4 very soon - full review within three pages, see next) has fifty million levels (OK, then - 10,000) and each can only be accessed via a secret eight figure code. Now, **Geoff** (it is said) has developed some wacky system for encrypting these codes, so the only way into the various levels will be by playing the thing from level zero, and considering it took me a weekend to get to level 253, this is no pushover.

Hacking into the program will be useless, says a **Flamingo** spokesperson, because even if someone gets through, there are a whole lot of numbers, just to put you off! Will the *Sentinel* code ever be broken? **Flamingo** remains adamant: "No way," it says. Me? I give it three weeks, max.



Sentinel

Beyond is brought from the cold

BEYOND'S career as a separate entity is now over, according to BT Telecommunications head Kathy Williams. In the past few months it has lost publisher Francis Lee and marketing manager Marc Pearson, and rather than replace these two Williams has taken the opportunity to merge it more closely into BT's mid-range operation, which now consists of Fordist Gold, Colin and Beyond.

These three will now be run as separate labels by a more

centralised production team, with the different labels being used to differentiate between different kinds of software, and Beyond in particular concentrating on "quest adventures and learning tools." Significantly Williams refers to these as the label's existing specialisations, although Star Trek is actually only the second such deal Beyond has been involved in. The first was last year's disastrous *Superman* game.

Williams feels that more



"We've orders to return to Federation territory captain."

centralisation will be good for the BT labels, making them more flexible and easier to run. "In this business it's no longer easy for a small unit, even within a big one."

The merger should go some way to decrease friction within Telecommunications,

where staff have spoken of resentment at the way the label sometimes seemed to be run. Williams says that the reorganisation had been talked about before the departure of Lee and Pearson, but confirms that their leaving also had an influence.

UK denies piracy claim

UK Software, which last week was at the centre of two separate piracy claims, has laid the blame at the door of the programmer in both cases, but Sinclair of UK accepts that its *Crusades* line is similar to Mastertronic's *Spellbound*, but says that he released the game without being aware of this.

"We hadn't seen *Spellbound* until Mastertronic contacted us, but within half an hour we'd withdrawn it from sale." Copies of the game are now being destroyed as they come back to UK. "Any software house in the country is open to things like this," says Sinclair. "I just worry about how much of it can go on."

Mastertronic itself is now pursuing the matter with the programmer, who has been given the option of admitting guilt or being sued. "I'd like it to be known to any software house not to go near the guy," says Alison Beasley of Mastertronic.

The second clash, between UK and Autogenic, seems to be more complex. Autogenic's *The Last of the Free* and UK's *Quest for Freedom* are

very similar, and were written by the same author, but Sinclair claims UK had the program first. "We played the £300 for exclusive rights early in 1988, and we made it clear that we would not release it until Christmas."

The programmer seems to have agreed with both UK and Autogenic, but Sinclair insists that he signed with UK first. Neither software house has as yet seen the other's product, but it seems unlikely that the matter will go any further. "I'm prepared at this stage to accept that Autogenic published it in good faith," says Sinclair.

Commodore predicts profit

COMMODORE moved a little further back from the precipice last week, agreeing new credit terms and predicting that it would show a profit for the second successive quarter.

The new agreement gives Commodore a worldwide credit limit of £140 million, slightly up from the previous figure of £126 million, and is due to be signed later this month. The results for the quarter ended September 30 are due for announcement later this year.

Budget PC software producer aims for the big time

US, mid-price software producer Mijert International is set to move into the European market with one of the best bargains ever to be offered in the PC sector. The company is selling *Ability*, one of the most highly regarded integrated packages in the US, at an introductory price of £69.95 (a normally £99.95) and is offering free training for dealers in the use of the package.

According to Mijert managing director Chuck Hamilton the aim of this is to ensure that practically every dealer in the country knows how to use the package, and to take Mijert up into the big league alongside Ashton-Tate and Lotus.

Mijert certainly has a lot more experience on board than the average newcomer. Company chairman is ex-Lotus and Ashton-Tate, while president David Patrick is ex-Ashton-Tate and development head C. Wayne Ruffin wrote *Ability* and *Ability II*.

In addition to *Ability*, Mijert will shortly be launching *Info-Aid*, a database management system, for £139.95, and will be bringing other titles here as US sales into the UK next

year. The most interesting of these isn't software at all -



Hamilton: Free Training

the company produces a pocket modem that is five inches long and supports baud rates from 300 up to 1200.

The device costs \$150 in the US, and is likely to be around the £100 mark here. For this you get a Hayes-compatible box that is completely software-controlled - it simply has an RS232 port at one end and two 8T sockets at the other, and is powered by a single new volt battery. The device has yet to receive BAFT approval, but is expected to go on the market here sometime next year.

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Umbrella body formed

A MEK microcomputer industry trade association, the British Micro Federation, was set up last week.

The BMF aims to fill and expand the roles played by the now-defunct Guild of Software Houses, and will include hardware manufacturers, software companies, wholesalers, distributors and the computer press in its membership.

Around 75 companies were represented at the inaugural meeting held in North London, and five areas headed initially for the federation's attention.

It was generally agreed that relations with national newspapers, television and other media were poor, and that a

less gloomy picture of the microcomputer industry could be presented. Most speakers concurred that thorough and accurate market research on the size of the industry and statistics on hardware and software usage was needed. Thirdly, a suggestion for the BMF to draw up a code of practice for members - pre-announcement of software releases were included here.

The need to act strongly against software piracy, in conjunction with the Federation Against Software Theft was also noted. Finally, the use of the federation as a forum for discussion and co-operation between companies went on the list.

Three from First

FIRST Software is to launch three new PC packages this month - *Decision Director*, *Ability* and *Priority*. *Ability* is an integrated package from Magnet (see page 6) relating around the £75, mark, while *Decision Director* is a lower cost alternative (£39.95) consisting of word processor, spreadsheet and window manager.

Priority is a £49.95 print utility designed to work with any word processor and to make it easier to control the printer's functions. First suggests it could be particularly useful with laser printers.

Details from First Software, Unit 20b, Horseshoe Road, Horseshoe Park, Pangbourne, Berks RG8 7SN. Tel 07357 5244.

Footnotes

LEVEL 9 has signed a contract with Delta 4 to produce a joint project special adventure for publication next Easter. Both parties are keeping quiet about the subject matter, but here we see Mike Austin (R) showing Pergus McNeill (L) a bag he's found in the program...

Commodore is meanwhile keen on convincing us that it knows just what we'd all like in our stockings this Christmas. The company's stand at next month's Commodore show will be "bristling with innovative gift ideas" including, apparently, "some of the results currently being derived from the Kings in use at the Heaton, Yorkshire Archaeological Project, the largest rural excavation in the country." Just what we'd always wanted...

CSD on the other hand is

spoiling the virtues of its Sparklers range of budget games. "Sparklers are too good to be budget," mutters the release. As we recall that's what CSD thought when it released them at full price some considerable time ago...

Well, if you can change your mind once...



Austin and McNeill

New printer from Brother

BROTHER is to launch a souped-up addition to its range of printers at the Which Computer? Show in January. The Brother 1700 will sell for around £595, has 138 columns and prints at 240 cps draft and 90 cps PLQ (near letter quality).

The 1700 has a 24K buffer

and its features, including the interface selector, line spacing and baud rates are all selected from the front panel rather than by dip switches.

Details from Brother Peripherals, Shipley Street, Guide Bridge, Aylesbury, Manchester M24 5JQ. Tel: 061-330 8531.

Diary Dates

NOVEMBER

3-9 November
Electron and BBC Micro User Show

New International Hall, Grosvenor Street, London SW1
Details: Hardware, software and peripherals for the Electron, BBC micro and Master series
Prices: £1 adults, £1 children, £1 discount for advance booking
Organiser: Database Exhibitions, 061-405-8825

8 November
BRUCE National Cinema Show

National Motor Cycle Museum, Birmingham

Details: Britain software and hardware
Price: Free
Organiser: BRUCE, 07962 3399

15 November
Wales and West Computer Show

Central Hotel, Cardiff
Details: All types of home computer and support
Price: £1 adult, 50p children
Organiser: Printer Exhibitions, 0692 550285

21-23 November
The Commodore Computer Show

Round, Hammersmith, London W6
Details: Hardware, software and peripherals for the Commodore range of computers

Price: £3 adults, £2 children, £1 discount for advance booking
Organiser: Database Exhibitions, 061-405-8825

22 November
8800 Show

88 Kalls of the Royal Victoria Hall, Coventry
Details: Show for the Dragon and Tandy Colour Computers
Price: £2.50 adult, £1.75 children, reduction for advance purchase
Organiser: James Pope, Mincote, 0753-58523

25-30 November

The Atari Christmas Show

New International Hall, Grosvenor Street, Westminster, London SW1
Details: Hardware, software and peripherals for the Atari range of computers

Price: £3 adult, £2 children, £1 discount for advance booking
Organiser: Database Exhibitions, 061-405-8825

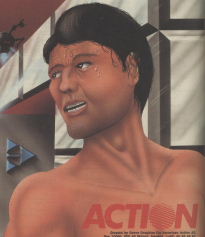
Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organiser before attending. *Popular Computing Weekly* cannot accept responsibility for any alterations to show arrangements made by the organiser.

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More to being a woman than cooking

Your Ziggurat in *Popular*, October 23 has prompted me to write as it cited out for further discussion (albeit from a male).

Granted that the computer industry seems geared to male tastes, but surely there is room for female participation (witness the ladies of *Et Bréda!*). Market research doesn't seem to be the industry's strong point, especially when yet another *STW* arcade game or Telescope adventure will bring the money rolling in.

Your article goes on to make serious (yet equally solid points but doesn't offer a possible solution to the problem.

I don't have a cut and dried answer, but I have another question: what kind of software would most women like to see? On the face of it, there doesn't seem to be very much in women's magazines that would be better served by a computer interpretation.

Cooking or knitting programs (though certainly possible) are as tedious as they are offensive. There must be more to being female I hope than that I have a few suggestions:

A) Tips on the use of cosmetics (using graphics and a database).

B) Diet and calorie calculating tailored to the individual.

C) Romantic adventures involving real people for a change.

4) Educational software with a shift towards the mother rather than the father.

To men this may sound like a recipe for boredom - do women feel the same way? I think it's time women made their feelings known.

Nice Christmas
RuthAnn
Surrey

The Editor replies:

While we take your point about no solution being offered in the Ziggurat, it has to be said that neither of *Popular's* two women staff were really wildly enthusiastic about your suggestions.

I dread to think what a bunch of low-res pixels would do on a cosmetics program; diet programs have been around for some time now, and can obviously be quite useful (if you feel like loading up the computer every time you eat a Mars Bar, but I'm not clear on why you assume only women need to diet. Advertisements involving 'people' rather than 'bells' is a plea we've covered in the Ziggurat column only recently. The idea about making them 'romantic' incidentally, went down like a lead balloon.

The point in the October 23 Ziggurat was about mainstream games catering for male tastes, particularly male heroes, and even as hero/only person who can defeat the Mighty Thorg, etc. Somewhere I don't think we'll ever see Judy Simpson's Hagnets-

ions, Fatima Whitehead Thross the Javelin, or Mortatkov's Wielder in the shops, although these three are just as 'marketable' as their male counterparts.

Plus, look at all the games which involve the player as a Harlot/Ford-style hero off to rescue the latest 'helpless princess'. Let's face it, if you're an unweaned man stuck in a *Kavaleke* type scenario, with dragons, locked doors and henchmen gauding over you, you're going to need some outside help.



Fun and education

Although delighted to read your article on the Commodore 64C Commodore's Collection (*Popular*, October

18), I fear that Andrew Mayhew may not have seen the handbook from ourselves submitted with the machine for review.

He would thus have realised that this collection represents a deliberate departure from the previous games/journals compendia in that it appeals less in providing whole family entertainment over the Christmas period and the basis for continued fun and educational value afterwards.

I appreciate that time may have disallowed him a foray into the Leisure Genius games but *Monopoly* and *Sonnet* in particular are not only faithfully computerised transfers of the original board games but, I believe, are better in many respects than the originals. Computerised bank balances and property records were more feasible in favour of the version of *Monopoly* and the educational value of *Sonnet* is legion.

On the subject of value for money, the cost of the review and chess graphics package plus a 64C at a total recommended retail price of around £250 equates with the complete Collector's price so the Derivates, five board games and Phoenix typing tutor are effectively free of charge. So, making Andrew's recommendation to its logical conclusion - buy a Commodore's Collection and you have the basis of a sound investment.

Lastly, he suggests that 'a return to the software 64' will be Commodore's salvation. After four years and world-

continued page 12 >

Puzzle

Puzzle No 232

I am thinking of a four-digit number, with all digits different, said Arnold. And I want you to guess what it is.

8011, I replied, frowning a guess.

Sorry, 'hinters a real' remarked Arnold. 'Your number only contains one of the digits in the number - but it is in the correct position. How another guess?'

I did so, and Arnold replied, 'Very good! This time you have got all the digits correct, though not in the right order. It told you are just 1488 too high!'

Of course, I now know what number he was thinking of - but can you work it out?

Solution to Puzzle No 227

Answer: Apart from 1934 (given in the question) there are two other four-digit

numbers with this property:

$$5280 = 8^2 + 3^2 + 0^2 + 8^2 \text{ and } 9474 = 8^2 + 4^2 + 7^2 + 4^2$$

Solution: In the program all four-digit numbers are taken in turn and placed in the string variable AE. From this string, each digit is taken in turn, and the fourth power of the number is calculated. This is done by using multiplication rather than by using the power command to ensure absolute accuracy. Any numbers in which the total of the powers of the digits equals the generating number are printed out.

Winner of Puzzle No 227

The winner this week is B Hambridge of Leeds. Other Yorkshire who will be receiving £10.

Notes

The closing date for Puzzle 232 is November 24. Answers on a postcard please.

10 FOR N=1000 TO 9999
20 N#NSTR(N)
30 T=0
40 FOR F=1 TO LEN(N)
50 W=VAL(MID\$(N,F,1))
60 T=T+W*W*W*W
70 NEXT F
80 IF T=N THEN PRINT N
90 NEXT N

► continued from page 11

wide sales of six million units, the 44 is still capturing 30% of the total annual UK computer marketplace. Certainly it represents a substantial revenue source for Commodore alongside the Amiga. First year Amiga sales will grow in at between 120,000 to 150,000 units worldwide. Pretty good compared to the Apple Mac's 140,000 first year figure for a machine that he claims is "obviously not going to become the same groundbreaker".

Paul G Thompson
Advanced Marketing Services
PC Consultants in
Commodore (UK)

Eeey meeeny miney mo . . .

It was interesting to read the two letters published in your October 16 issue, making comparison between the Atari ST and two other machines.

The 1040 ST is on my short list for purchase, together with the expected new

QL improvement, the GLT by Sandy, and perhaps also the two new versions of the Commodore Amiga, expected soon.

My needs are rather more like those of Howard Oakley (Letters, October 16) than to the games player from Belgium.

However, the letter's desire for good sound and excellent colour graphics could, I suspect, be alternatively satisfied by the new Teaming Evolution, if only it had 512K rather than 256K.

And the new Apple II05, plus the rather expensive Amiga, could excite him, too.

But I am really after a cheap alternative for the Apple Macintosh Plus for desktop publishing and other business applications. So the micro-versions 1040 ST plus Mirrosoft's integrated Real Street Writer could be the answer.

One final point - can anyone advise me about Ram discs?

Would the use of Ram disc software such as that marketed by Probek for the ST enable one to manage without a second hard or soft disc drive? What is the normal advantage of having double rather than single disc drives?

P.M.P. Kingston
Bristol

Nigel Jackson
Cardiff

Fantastick?

I read with interest the article on the Fantastick 2 joystick (Popular Computing Weekly, October 26, 1989) article, although it reads like an advertisement for an extremely ordinary overpriced joystick.

All right, as it has four buttons on the base, an automatic fire switch and an MSX switch, The Spectrovision Controller 2 offers the same at half the price.

I know it doesn't have an MSX switch, but that's because it doesn't need one. It just works anyway.

I use my Quickshots on my Commodore 64, Yamaha CX5M and Toshiba HX-10, without any problem.

I also use two Coloco joysticks (old games controllers) on all the above computers, again with no problems.

Phillip Lavender
27 Elm P'Coed
Rady
Cardiff
CF4 8AQ

Get writing - get Popular

Popular Computing Weekly always welcomes contributions from its readers for articles, features, and program listings.

Whether you want to write articles, see your programming masterpieces in print, pass on some words of wisdom, or simply let off steam, there's space in the magazine for you.

Ideas for **feature articles**, or completed articles, should be sent to Christine Evelyn. All aspects of home computing are considered, but we cannot handle anything longer than 2,000 words, so brief is best. If a word check by phone or letter first that your article will be suitable. Payment is normally £35 per published page.

Technical editor Duncan Evans looks after the **program listings**, and articles on programming. We rely on you for our Programming section, so earn yourself a place in the Popular mail of Fame (and £25 for each page we print) by having your program published. Even if it's not 100% of K of pure machine code, but a short snappy routine, there may well be a place for it in **Bytes and Pieces** (10 a month).

Articles on any aspect of programming are also welcome - with short listings included if relevant.

Got something you feel needs saying loud and clear? Your opinions on any aspect of the computer industry are welcomed, so why not write in to the **Staggered** section? No more than 600 words, please. If published, we'll pay you £15.

So maybe it's not the money you're after, but you'd just like to have some say in the magazine.

For shorter comments, general observations or queries, there is of course the **Letters** page, with the tempting offer of a year's supply of Popular Guides for the Star Letter each week.

For more specific points, our team of columnists are always willing to answer questions, and keen to hear the latest information. Drop your lines to **Tony Bridge** (adventure hints always gratefully received), **Tony Keable** (info wants as many Arcade games, maps, solutions, etc. as possible), **David Wallis** (home institutions), **Karen Garroch** (programming problems), **Mark Jenkins** (music queries) and sample tapes) and **Martin Bryant** (computer chess comments).

All letters should be addressed to Popular Computing Weekly, 12-13 Little Newport Street, London WC2E 7PP. If you mark your letters with the department you want, things get processed much more quickly.



Left: the adventurous Tony Bridge.
Right: the writer Tony Keable.



The return of the prodigal Adventurer's Club

Tony Bridge uncovers the mysteries of adventurers' support groups

One of the most successful adventure clubs in recent months has to be *The Adventurer's Club*, run by Henry Mueller. The combination of a full-time club offering help, well-founded advice and discounts to adventurers proved irresistible to many of the hobby's adherents.

During the early part of this summer, however, I started to receive letters from members worried about the lack of response from the club — a dilemma common to many of today's home computing business, but I was surprised to hear that this particular operation seemed to have gone the way of other less thoughtfully-run clubs.

Throughout the summer, all has been very quiet from *ACL*, while I have opened more and more letters from disgruntled members. By now you will probably have read that the club is back in business, with Henry once more at the helm. He is now in full control of the club, rather than the managing position he held before and has obtained the services of Hugh Walker, *Adventurer's Supreme* and

Richard Barrie, the originator of *RAUD*. Pete Austin of Level 9 will, I believe, continue as Honorary President.

If you are serious about your adventuring, then it's well worth joining *ACL* as it is one of the best. However, the whole episode must serve as a warning to everyone that things can go wrong — most enthusiasts are not aware.

In the meantime, other clubs and magazines carry on. Nick Walkland's sci-fi classic *Questers* is my favourite. Many pages of adventure reviews, comic strips (well, unfortunately, uncredited), the usual verbose letters (I love 'em) and of course the requisite tips and help for just 70p is a great deal — and this is one of the few magazines that receives contributions from established writers in the field such as Bob Chappell and Mike Garland.

What is evident from reading *Questers* is that adventuring is obviously fun to the producers of the non-profit making magazine. Write to Nick at 84 Kestrel Road, Sheffield S8 4QH, or ring 0742 340433.

Pat Winstanley and Sandra Sturkey



are still getting away with *Adventure Probe* and *Adventure Contact*. *Probe* is the usual stuff of help, advice, letters and reviews — although the magazine is well-written it's a bit pricey at £1, although there is a very cosy atmosphere about the whole thing, and Pat and Sandra seem to encourage a lot of support from women adventurers as well as men.

Contact, on the other hand is unique and a much better deal for just 50p; in this magazine, you'll find all sorts of advice on writing and marketing adventure programs, drawing on the personal experiences of authors who have already taken the plunge. The present issue has a detailed breakdown of the differences between *The Gull* and *Incentive's* *QAC*, as well as articles about packaging, copyright matters, Do's and Don'ts of adventure-writing and so on. *Sanders for Pleasure* can be found at 26 Merion Road, Wigan WN3 6AT, and Pat (the Contact one) of the entomologist can be contacted at 13 Hollington Way, Wigan WN3 6LS.

Next week: news of a new *Gull* and some new games coming out.

Adventure Helpline

Rebel Planet on Commodore 64. I cannot open the outer hatch of the space ship *Chica*. Raymond Edgar, 91b Grosvenor Park, Carlsberg, London SE5.

Empire of Sam on Commodore 64. How do I get the diamond from the snake? What do I do about the crack in the pyramid? David Wessendale, 8 Upper Town Road, Greenford, Middlesex UB8 3JE.

Rescue on Spectrum. I cannot find the gold key. I cannot get the last with the sword to stop killing me. I cannot get the iron rod without dying. Luke Buxton, 86 Seaton Gardens, South Shields, Tyne and Wear.

Return to Hlaca on Spectrum. How do I catch the cat? Where is the food I need to eat? Alan Higgins, 22 Tredynton, Monmouth, Gwent.

Souls of Darkness on Spectrum. How do I get the key? Also how do I get the crystal? Sean Hasdon, 30 Pegasus Lane, Bilston, West Midlands.

Dungeon Adventure on BBC B. How do I get the boots without the goat killing me, and how do I kill the black sphinx? Mrs Barbara Gibb, 62 Surfport Road, Liverpool L16 6AJ.

The Quest on Commodore 64. I can't get very far. Please, any help — I'm going mad! David J La Messurier, Register Technician, Aftisat Falcon Centre, Al-Soudah Plaza, Abta P.O. Box 973, Saudi Arabia.

Seals of Gorbun on Amstrad CPC 6128. I've found the sword, sea, study-room, and gravity belt, ring and coin, but I cannot get past the moonlink. Hajji M D Adin, 78 Chestnut Road, New Barnet, Herts EN4 9ED.

Adventure Helpline

Going bananas? If you are stuck in an adventure with nowhere to turn do not despair — help is at hand.

Fill in the coupon, explaining your prob-

lem, send it to us, and a fellow adventurer may be able to help.

Remember — the system only works if those adventures who have solved the puzzles get in touch. Every week is Save An Adventure Today (SAAT) week!

Adventure	or (Email)
Problem		
Name		
Address		



Wear boots, give glue to aliens

Tony Kendall (*finally!*) tells you exactly how to solve Knight Tyne

As promised last week, we have the puzzle here for Sarcary and Betsson for the Amstrad CPCs. Many thanks to Hackers Unlimited.

Before giving the complete solution of Knight Tyne from Adam Meyer, which we'll do in two parts I thought it would be as well to give other people a chance by stopping in the following from one or two other letters.

Stephen Johnston of South Oxinden sends the following tip: "The bag of nuts will enable you to clear the 'sarcary oracle' spell. If you wear the magic talisman you can remove the barrier (however, the game can be completed without this). Pay close heed to the information given at every planet you visit."

Stephen writes that "Knight Tyne is one of the best games I've ever played at, writes many arcade adventures including Spellbound, it holds the player's interest with problems that I had to keep returning to."

Phil Watson of Milton Moreton had not finished the game when he wrote last week are his tips, which we will follow up with Adam's contribution to the solution.

Upon starting go left one room and take the instant film from Gordon and the McTabler food from Sarah. At no time may you drop the laser. Drop gadget X. Unwear your cloak of invisibility. Go left one room and get the camera. Go right three rooms and command Dobby to help and a black ID card will drop onto the floor. Pick this up.

"Next find the small robot SIED (make sure it is not the robot Kinky) and give him the instant film and the camera and then command her to help. You may have to wait here up first. Then take from him the photograph and the jar of glue and select the wear command from the menu and select the new viald ID card. You can then get Sarah at the bridge for help and get the solvent from Sharon. You can fairly be if she needs it."

Adam Meyer continues: "You can give Sharon the heart from Gerty, it isn't

necessary but it makes her feel wanted. You can now get the map and the tankard and you will find that you can go up in the world."

"Before you go to Monopole go to Starbase one where the transporter will be fixed and where you can refuel. When travelling between planets always use Time Distant 1 as it saves fuel, otherwise you may not get enough at the planet to refuel. Some of the planets which give you fuel are Earth, Eden, Lyxia, Hanzhoff and Treznora."

"Also from Starbase get the boots in the last room. In the 128K game the quake bomb is used to blow up planets but I don't think it does anything in the 68K game. Get the bag of potatoes for

glu — get this and take the part of a sarcary seed talisman from Hooper."

"On the ship uncover the gas mask and the cloak and go to Petrest. If you hang around Lyxia and have into their table you will find Murphy's coordinates but, just between you and me, they are BK 4Y 1Z."

"Once down there you may have to use the remove barrier spell to get to him. Take the part of a sarcary off him."

"When you meet up with the Tyne guardians take care because they are lying — go over to Treznora to find out why. Alternatively just tell one to the coordinates that they give you. Before you beam down put the three sarcary parts together and pass the lightning bolt. Cast this again after they give you a machine. Before you launch it remember what they said at Hanzhoff."

Here is a list of the routes to various planets:

Eden leads to Ceres, Geth, Monopole, Lyxia, Brighton, Polaris.

Starbase

Starbase leads to Eden, Hanzhoff, Polaris, White, Gangeira.

Hanzhoff — Monopole, Portus, Reef, Pop Pop, Starbase.

Monopole — Geth, Polaris, Eden, Hanzhoff.

Ceres — Ceres, Monopole, Lyxia, Eden.

Deed — Geth, Lyxia, Silver Lyxia — Deed, Earth, Earth, Brighton, Polaris.

Brighton — Lyxia, Eden, Polaris, Dragon Egg.

Polaris — Lyxia, Eden, Brighton, Earthbase.

Dragon Egg, Arid.

Dragon Egg, Arctic.

Arctic — Polaris, Starbase, Gangeira.

Gangeira — Business, Reef, Bell.

Bell — Polaris, Gangeira.

Business — Pop Pop, Treznora, Geth, Polaris, Reef.

Pop Pop — Portus, Reef, Lyxia, Hanzhoff, Treznora, Business.

Portus — Monopole, Reef, Lyxia, Pop Pop, Pop Pop.

Reef — Polaris, Lyxia, Hanzhoff, Pop Pop, Treznora.

Lyxia — Reef, Business, Pop Pop, Treznora, Hanzhoff.

Treznora — Lyxia, Treznora, Gangeira, Bell, Polaris, Polaris.

Gangeira — Lyxia, Business, Treznora, Gangeira, Hanzhoff, Polaris.

Belle — Business, Gangeira, Polaris, Polaris — Treznora, Gangeira, Gangeira, Hanzhoff, Monopole.

Monopole — Polaris.

Next week we'll pass on some tips for Helbert's Dummy Run and a map for Snake Force Crisis.



give to Murphy on Petrest. Wear the boots. Give the glue to an alien — I can't remember his name but he is glib if you have chosen the invisible option at the beginning — just ask them all for help."

"I found the hardest part was getting the coordinates of L655 Paces — this made me give up the game until I got help — the answer is of course X0 Y0 Z0."

"At Monopole wear the gas mask and cloak of invisibility. In the life last room you can get coordinates on a terminal, in the second room there is a yellow table-

Star Trek!

In the year of the twentieth anniversary of the world's best-loved TV series, it's appropriate that the event be marked by what looks like being a classic computer game, writes *Chris Jenkins*, and that's what *Star Trek* is about.

Star Trek is known throughout the world, and in fact of the 80-odd TV episodes are still being shown, together with the three films (and another in production). The *Star Trek* game, from the Beyond label, is near completion and looks like a stunning production effort which will capture the imagination of thousands of Trekkies.

The *Atari ST* version will be closely followed by *CD-ROM*, *Amstrad* and *Spectrum* games. In each the format will be similar but it's the *ST* version which will probably have the most impact with its incredibly detailed graphics and enormous playing area.

The visual title of the game - *Star Trek: The Rebel Universe* - reflects the format of the adventure. It takes place in an enclosed globe where units of *Star Fleet* have been going to and throwing it their lot with the despicable Klingons. Your task is to patrol the globe, hunting out the loggers and bringing them back into the fold - or eliminating them. The main display shows all the main members of the cast on the bridge, the *TV* version incidentally, not the movie

version. Using the mouse you move the *Star Fleet* insignia to the character you choose and click to bring up the command screen.

The individual portraits of the main characters - Kirk, Spock, Scott and so



on - are wonderfully drawn by artist Steve Cain, and could almost be photographs. As each character's command screen fills the main area, the bridge display is relegated to the sidebars. Ready to be called again when you want to assess a new character.

Each character controls a different

aspect of the ship's operation: *3-D* navigation, *Chelav* weapons, *McCoy* medical and so on. It's up to you to select phrases, photon torpedoes, warp drive, and all the *Star Trek* paraphernalia we have come to know and love.

Your first task, obviously, is to select a star system and warp to it. You use *Sub* to set your course on an incredibly animated 3-D star globe that wags to the star system and scan for inhabitable planets. Pulling together a team supplied with appropriate equipment from the stores is the next task; then select the *Transport* option to beam down to the planet.

Once landed, your team must negotiate also complexes, solving the puzzles of locked doors and intractable aliens using their individual skills and the equipment available. Should any character be injured by dangerous animals or alien entities, it's back to the ship and straight to sick bay for *McCoy* to work his magic.

The action is illustrated by gorgeously detailed graphics of the *Enterprise* in orbit and any alien ships you might encounter. Apart from the familiar Klingon and Romulan battle cruisers, these will include fast-moving *Kuilar*-killers which give more vicious as the game progresses.

The battle scenes take place on two screens: a medium range scanner which revolves to show the location of incoming hostiles, and a short-range display in which you target wire-frame graphics and launch your photon torpedoes. Watch out and still you should see the alien cruisers disintegrate; if so, and you haven't sustained too much battle damage, it's on to the next star system in search of the next artifact or form of life you need to complete your quest.

The finished game will include communications routines for *Ultras* to perform, sampled speech from the *Trek* series, and authentic sound effects. With 256 subplots to complete, and a number of different win scenarios (gives any number of *Isomorph*) it looks as if *Star Trek: The Rebel Universe* is going to provide a feast of entertainment for games players of every type.





If you're tired of *Spies*, *F15s* and the like, this is the big one. US Gold's *Dam System* puts you at the controls of a Lancaster bomber, and pits you against *Fok*, searchlights and of course the dams in an effort to do severe damage to Germany's war effort.

Unusually for a flight simulator you play six characters in all - navigator, flight engineer, pilot, bomb aimer and fuel and tail gunners. You switch between these with the aid of the function keys, and the nearer you get to your

target the more frantic the action gets.

The game can be started at one of three points: dam approach, in mid-Channel or at your base airfield, with the difficulty level being varied simply by the clearance to the target. Starting from base you switch to the navigator to set the course, then to the engineer to fire up the engines, then to the pilot to take off.

Once you're airborne you adjust the balance of the engines and toggle between gunners and pilots, with the odd dose of flight engineer to

More bluster and fluster

adjust speed or put out engine fires.

The primary section pretty well knocks any idea you might have had about simulations on the head. You spend the entire mission blazing away at *Fok*, searchlights and enemy fighters, and while it's entertaining from an arcade point of view you generally find you've knocked out more than a self-respecting *Kevin* could reasonably sustain. I was also a little perplexed to discover that you met as much opposition over Wales as over the Ruhr...

Once you abandon the Welsh Water Authority and get to the real target you need to line up the aircraft at the right height and speed then switch to the bomb aimer, who fine tunes the height and

drops the bombs. In my experience you then get a pretty picture of your bomb bouncing across the lake - and missing.

As a game it's diverting enough, but I feel it could do with a little extra something to make it great entertainment. And on that subject I notice that the wrapping says 'Lancaster' model after inside. I've never had an offer from a Lancaster model, but as it hadn't been included I remain disappointed.

Popular Appeal ★★

John Lattice

Program Dam System
Micro IBM/PC and compatibles
Price £19.99
Supplier US Gold, Unit 10, Parkway Industrial Centre, Birmingham B7 4LY.

How to win an Academy Award

Pete Cooke's *Nav-Cor* was acclaimed as one of last year's best games, with original 'moon-escape' style graphics and sophisticated controlling of your craft through doses of over

each end to qualify to move up a level (you must score over 80% on your present stage).

Menus are used to take you through the graphical stages of selecting a mission



Having done that, you can set off on the *Level 1* missions, enticingly called *It Moves*, *Red Dawn*, *Meltdown* and *Softly Softly*. A separate screen gives some rather enigmatic details about what these entail.

Having chosen your mission, equipped your skimmer, and launched yourself on to an unsuspecting solar system, you find yourself in a very *Nav-Cor*-esque scenario of strange shaped objects looming up from the distance, smooth, swinging movement from right to left, and plenty

to shoot at.

The interactions with the game are long and fairly daunting - rest assured that the game is rather more straightforward to play.

If you liked the graphic style and gameplay of *Nav-Cor*, then *Academy* isn't going to hold any disappointments.

Popular Appeal ★★★★★

Christina Ebbike

Program Academy Mission
Spectrum Price £9.95
Supplier CRL, 9 Kings Yard, Coppenham Road, Gosford, London E7 6

"A really nice touch here is the option to design your own skimmer"

space.

Well, every good game deserves a sequel, and Cooke has mine come up with *Academy - Nav-Cor II*.

Academy has you as a student pilot at the Gallop Academy for Advanced Skimmer Pilots, taking on 20 missions in order to graduate from the college. The missions are divided into five levels of two

to try out and a skimmer to go with it.

A really nice touch here is the option to design your own skimmer, rather than settling for *Q2S Lania*, *Lincoln* and *Weslan*, already provided. You can put all the instruments and controls exactly where you find them most handy, and choose your own equipment - within a budget.

The tassiest game in the world

Forget about steen credibility. Elimination 'tap' and 'cool' from your vocabulary. There's a new quality to be had.

'Tass' is what it is, and 'Tassown' is where it's at. And you can get it in the latest advertisement from Accusion, *Kiss Tass in Tassown*.

In Tassown, however, being tass is not merely desirable, it's essential for your survival. Because if you're not tass, you're a tourist and local mass machine Franklin Sharp has a nip with tourists.

He leads them to his Cocogators.

If this is beginning to confuse you, let's backtrack a little. You start at the deserted home of your friend Grampa - deserted, that is, except for his faithful dog, Spot.

Your first task is to find the transdimensional doorway to Tassown where Grampa has disappeared.

In Tassown you can't do a thing until you get tass. That means buying new clothes, a new hairstyle, and getting a job. Check out the copy of the Tassown Times that came free with the game for some ideas.

Once you stop looking like a tourist, you'll find the locals helpful - hang out at Fast Freddy's, check out the Daglets concert in the park. But watch your back.

Your picklock for the duration is good ol' Spot. But in Tassown Spot is better known as Brno, ace reporter for the Times, six times winner of the Inter-Miscal Ultra Journalism award, and known locally as The Legend.



As you've probably gathered, *Tass Times* is an adventure like no other. It's illustrated, and animated, with an excellent musical soundtrack too (wander into the Woodlands and you'll get a close encounter with a Cocogator to the accompaniment of mean and moody Jews-like music).

There are traditional adventure puzzles to be solved - a deep, dark well where you'll need a light, for example - but *Tass Times* is original to the nth degree.

The power is not up to software standards, the graphics are no match for *The Pawn* but *Tass Times* can hold its head up in any company. Don't be a tourist - get with who's tass.

Popular Appeal ★★★★★
Peter Westbrook

Program *Tass Times in Tassown* **Miscal Commodore 64/128 and Atari ST, disc only (Price: £64 £19.99, ST £24.99) Supplier** Accusion, 23 Pond Street NW3.

A different game

Why is it that new shooter or puzzle games always have 'The Reinventer' as their theme song? After loading up Electronic Pool from micro-cassette games what was the first thing to issue forth from the monitor's speaker?

If you were expecting a game of eight ball Pool then you would be in for a disappointment because EP only has seven (including the white). Initially I groaned at

this but then I realised just how boring that would be as a game and how much better Electronic Pool is because it's different.

What you have here are the six balls and the six pockets numbered from one to six. The game is all about points. So, if you sink the six ball in the pocket labelled two, then you score 6 x 4 = 24 points. Just to keep things interesting once a ball is potted the number on the hole moves

round and if you're playing against someone over a set number of frames (one to eight then) all the points scored are multiplied by the frame number, including those four holes.

In the one player game you are given three 'trials' (to be strict), in some as many points as possible, this registering in the Hall of Fame (not permanently however - boo, boo). Committing a foul or failing to pot a ball on three consecutive shots costs you a life.

The algorithms concerning

ball movement and reaction are generally very good with most shots going where you want.

Disappointingly, Electronic Pool utilises none of the ST's advanced abilities, but is still a fairly entertaining game.

Popular Appeal ★★★★★
Duncan Evans

Program *Electronic Pool* **Micro Atari ST Price** £19.99. **Supplier** Microdeal, PO Box 88, St Asgell, Cornwall PL25 4YB.

A weak and pathetic effort

Every obviously have a thing about flogging a dead horse. Witness *World Games* - the follow up to *Summer Games*, *Winter Games* and *Summer Games 2*.

This trial you travel in jerry boat around the world to various locations which bear little resemblance to reality to compete in weightlifting, barrel jumping, cliff diving, slalom skiing, log rolling, ball

rolling, cable taxi and canoe wrestling of all things!

Weightlifting in deepest Russia is a fairly bland affair, no crowds outside the hotel at midnight, keeping you awake and so 1000 agents giving you strange parcels at the airport.

Ball rolling, cable taxiing and log rolling are basically garbage, the graphics being amazingly uninteresting.

Cliff diving in Australia is good fun, the impact of the diver against the rocks when he becomes his own and the accompanying 'thud' is almost painful to watch.

Slalom skiing, canoe wrestling and barrel are all done competently but this is hardly good enough. Indeed, the entire package has the feel of something knocked out in a hurry before people get com-

pletely pissed off with sports simulation.

Popular Appeal ★
Duncan Evans

Program *World Games* **Price** £3.95 **Miscal Commodore Supplier** US Gold, Unit 70, The Parkway Industrial Estate, Cotnis, Henage Street, Birmingham B7 4LY.

Cashing in on the public domain

If you own an IBM-PC compatible, Marcus Rowland can tell you where to get some reasonably good software for cheap

It's now possible to buy a complete IBM-PC compatible computer at less than last year's price for an eight-bit home system with monitor and drives. With the arrival of Amstrad on this particular scene, interest among individual users, as well as small business users, is soaring.

A problem which will probably continue for some time is the fact that PC software prices range from expensive to exorbitant. While manufacturers have begun to produce more reasonably priced packages, under pressure from Alan Sugar and Amstrad's own pricing policy, they are still far more expensive than their eight-bit home equivalents.

One alternative is the cheap and free software distributed by special interest group (SIG) libraries. All of the software in these libraries is either public domain or freeware. Public domain software is available without any obligation; the user is free to copy it, modify it, and pass on copies at will.

Freeware is also readily available, but there are usually a few conditions to its use.

In general, the author hopes to be paid for programs if they are useful, and asks users to pass on all of the original unmodified programs (including subsidiary files and documentation, if it is on the disc) if copies are given away.

In return, registration of a program is usually rewarded with the latest update of the program, often including source code or enhanced features.

Some of these programs are too bad for commercial distribution, others appeal to special interests. A few are original or provide cheap alternatives to commercial products. Nearly all are American. Usually there are no guarantees of reliability or compatibility with any given hardware or operating system configuration.

The most important open-access PC libraries are probably the American PC-Sig and PC-Bug collections, and Britain's

"Some of these programs appeal to special interests - a few are original or provide cheap alternatives to commercial products"



The IBM-PC compatible

PCBBUK (PC Bulletin Board UK) library. Several British suppliers have access to these collections. Usually it costs £1.50 or £2.00 to have the contents of one library volume (500K) copied to a formatted disc, plus postage, though this can vary between different suppliers. All now charge a membership fee.

Many of the programs in these libraries are bug-ridden or otherwise useless; the selection below covers software I've liked enough to keep. It also reflects my own interests; since I don't use financial programs or spreadsheets they aren't covered, but I've probably given word processors and auxiliary programs a little more attention than they deserve.

Most of the volumes mentioned include additional programs, of varying quality. All of these programs include some documentation, though the quality is very variable.

Programs were tested on a 640K IBM PC with a colour card and RGB monitor, using PC-DOS 2.1, and were also tested

for compatibility with Sokolai, a regular memory-resident program that is a good test of software bugs. The first two have also been tested (fairly briefly) on the new Amstrad PC, however, in the course of the PCW show it wasn't possible to test all programs comprehensively. They were not, for instance, tested with Gem loaded. All are claimed to run in 256K or less.

Probably the most famous freeware program is PC-Write, a word processor by Bob Wallace (Quiksoft). The current version (2-6) has a maximum file size of 80K, approximately 48 double-spaced pages, and is fast and moderately user-friendly.

Unfortunately the program tends to suffer compatibility problems with each new release; there always seems to be differences between control keys, embedded control codes, and the like.

Features of this release include split-screen and multiple document editing, DOS commands from the program, mail merge, document merge (to allow final documents much larger than 80K), printer control codes, and an extremely wide range of configuration options, covering every aspect of program operation, display, and screen control.

The main limitation is that this isn't a "what you see is what you get" program; text is only formatted when it's printed, and page breaks aren't shown on-screen. There is a 41-page manual (supplied as a text file on the disc); this isn't the complete manual, which is supplied on payment of a \$26 (around £25) registration fee, along with the latest version of the program and its source code.

If someone registers a copy of your registered disc you'll be sent \$26 (about £15), given away enough copies and you make a profit! Versions up to 2-55 were supplied with full 300-page documentation, as a compressed text file, and are still available. PC-Write Version 2-55 is on PCBBUK volume 63, version 2-6 on PCBBUK volume 201. Earlier versions can be found on other discs. All versions support a wide range of monitors and printers.

While PC-Write covers most aspects of word processing, neither gives an on-screen display of forms, except by showing a marker for each control code. Cleverer, by Horstmann Software Design, remedies this omission, but is less than ideal in other respects.

It allows 10 forms on-screen (on the

continued on page 29

— continued from page 18

PC, in mono graphics mode). These fonts include normal text, bold, italic, old English, Greek, and a range of other scientific and mathematical symbols.

It's advertised as a scientific word processor, and can assemble complicated multi-level equations. The procedure isn't particularly simple, but the results are extremely good, ranging from draft quality to a high-resolution print mode that takes several minutes per page but produces extremely impressive text.

The main snag of this program is the author's method of persuading users to buy the program: it displays a 30-second advertisement as it loads, and on every five thousandth key press. Users who register the program get a version without the advertisement.

There also seems to be a bug in the printer configuration program supplied when you assemble the configuration data on the disc, making the program abort as it loads. Luckily the default setting is for most Epson dot matrix printers, and should be suitable for a wide range of machines.

Finally, the text display isn't particularly clear on a standard IBM graphics monitor and other screens with the same resolution (probably including Amnand).

Full registration of *Chemstar* costs \$69.95 (about £50), with further payments needed for Hercules and EGA graphics cards, popular alternatives to the standard IBM colour graphics display. Registered users get additional printer support, the latest version of the program, an editor for additional fonts, and a full manual. As it stands this program may not be a good alternative to Microsoft Word Junior, unless you particularly need the more specialised graphics it provides. *Chemstar* is on PC-Disk volume 173.

PC-Desknote is a memory-resident program designed as a replacement for *Sidekick*, offering *Sidekick*'s features of navigated text editor, modern dialer, calendar, and diary, plus additional features such as an alarm clock, disc utilities, and printer control. Not surprisingly, it isn't compatible with *Sidekick*.

Another problem is that it doesn't save text files in ASCII format, which makes it difficult to use this program to extract text from one file and paste it to another in common use for *Sidekick*. I wasn't able to test this program on an Amnand, and would advise users to be fairly cautious. Registration is \$29 (£18). *PC-Desknote* is on PC-Disk volume 133.

Three By Five (Softshell Corporation) is an unusual database package, designed to search through documents for references and create a report or separate files based on the documents it checks. It can cope with a wide range of files, including ASCII, Wordstar, and the like. It also has word processor facilities and can be used to edit documents as it

searches them.

One unfortunate aspect of this program might rule it out for some users: it saves the printer as it loads, and anyone who uses a print sposter or buffer may find that they can't use it during a long print run. *Three By Five* is on PC-Disk volume 173, with documentation and sample files. The author asks users to register their copies, but doesn't seem to ask for any fee.

Use Utilities by Proseco is a collection of disc tools, including a disc trapper, a file recovery program, a specialised formatting routine, and an optimizer. All seem to work well, though they require some knowledge of the operating system and machine code for safe use. Bearing this in mind, it's always advisable to work on backup copies of disc; various utilities allow safe copying of a corrupted disc before salvage is attempted. Registration costs \$40 (£28), with the benefits of telephone support (not particularly useful in Britain) and \$15 rebate if copies of your disc are registered in turn. This package can be found on PC-Disk volume 246, along with a database by the same author.

Lotuslog by David N Greck is a limited implementation of Lotus incorporating graphics (including some extra ornaments) and sound, but omitting bit manipulation, the ability to save screen images to disc, and variable numbers of parameters to primitives. The disc holds 54 pages of documentation, and some prepared subroutines. Somewhat, for example, draws a lovely Pascal pattern. My only criticism is that it runs fairly slowly; I've seen implementations for other computers that worked at double or triple the speed, and the turtle routines in *Turtle Pascal* are faster still. Registration costs \$35 (£26), no benefits are specified. *Lotuslog* is on PC-Disk volume 84.

Other languages available through user supported channels include several machine-code assemblers. *Loop (Misp)*, on PC-Disk volume 70; *Perth (Pip-Fish)*, on PC-Disk volumes 54-5; *Jason & Perry Fish* on PC-Disk volumes 283-4; *Prolog* (PC-Disk volume 417); *Pascal* (PC-Disk volumes 424, 510, and 540); and *C* (*Small-C*, PC-Disk volume 181).

Many of these implementations diverge from industry standards or are limited in other ways; for example, the two Pascal compilers are mutually incompatible with each other and with the most common compiler, *Turbo Pascal*, while the third Pascal program mentioned is an interpreter that is incompatible with anything other than a restricted subset of the language, but allows on-screen debugging and single-step operation of programs.

There is also a huge range of discs containing useful subroutines for various languages; most are for *Turbo Pascal*, followed by *C* and *Basic*, with other Pascal variants trailing in fourth place.

This survey has necessarily been extremely brief; for example, I've not mentioned any of the huge range of communications programs available in the public domain, from simple modem packages to complete bulletin-board systems.

More information on these and other programs can be obtained from two organizations:

Public Domain Special Interest Group, 1700 Holme Road, East Grinstead, Sussex RH18 2BA. Tel: (0402) 312883 (also File bulletin board).

CompuLink Users Group, PO Box 383, Slough SL1 8JJ. Tel: 04887 6828 (also File bulletin board).

In two weeks time we'll look at public domain games available for PC-compatibles.



This Disciple is no Judas

One of the problems with the Spectrum is that in order to build up a sophisticated system, you must add on many peripheral units, all of which must plug in to the user port. What's obviously needed is an interface which serves many functions, and if possible offers some new facilities. The Disciple seems to qualify on all counts.

This innocent-looking unit offers a disc drive interfacing, disc program transfer, electronics printer interfacing, networking and dual joystick ports, and costs a lot less than buying all these separately (apart from the obvious increase in ease of use).

The Disciple itself (and is similar in appearance to the Sinclair interface 1, and is in fact compatible with it, in fits on to any Spectrum, via its standard user port connector, and is secured into place, tilting the Spectrum to a convenient typing angle.

To the right of the unit is the disc drive connector, to the rear are the networking sockets, twin D-type joystick ports, flip-over user port and electronics printer port. On the left are the two control buttons; the inhibitor, which disables the interface's operating system in the case of a clash with incompatible peripherals; and the snapshot switch which can be used to produce screen dumps.

The virtue of the Disciple is that it can be used with any standard disc drive, single or double density, single or double sided, 40 or 80 track, 5 inch, 3½ inch or 5¼ inch. Likewise, any Centronics printer will do. This is because the operating system, which is usually loaded from cassette, can be tailored to whatever add-ons you have.

The pre-production version of the operating system consists merely of a series of text screens asking you to enter codes to define the type of drive, type of printer, and various options for file spacing, special printer functions, networking

features and so on. Once you have defined your system, you can save the file to a formatted disc for future use.

In operation, the system file resides in the Disciple's Ram and so takes up no Spectrum memory space. Unfortunately you must use the inhibit button to disable certain functions if you want to use a microdrive and Interface 1 while the Disciple is attached. The Disciple disc operating system allows up to 800K to be stored on a double sided, double density disc. You



can use any disc drive with a standard Sugenat connector, typically, a BBC compatible unit.

Up to two disc drives can be used connected, using file names of up to ten characters to store several different types of file. Basic, data arrays, character arrays, machine code, screens, microdrive format or 'snapshots'. The different types of file are identified with a code letter and a display of the file space used, when you list them using the Car command.

The syntax used for the disc drives can be the same as that for microdrives, to make life easier; however, there is a simpler syntax available which addresses the drives using the prefix D1 for D0. Files can be renamed, copied, erased, autoindexed, and so on. The computer can be reset without disrupting the DOS, and you can also use the Disciple's 'snapshot' button to dump the entire 60K (just 128K) program to a disc. This is of obvious use in creating a disc software library, and in saving programs at crucial points.

Using a printer is pretty straightforward, having defined your operating system in the question-and-answer session, you just use LPrint and LList. Two positioning commands, Tab and At, are also provided. It's also possible to produce screen dumps from any program, using the snapshot button and the caps shift key.

Networking allows up to 80 Spectrums to be linked with Disciples, to be linked together in a system sharing master disc drives and printers. The applications, especially for education, are obvious; again, the file saving system is defined in an opening question-and-answer session.

Finally, the Disciple's two joystick ports can be used either as Kempston standard (single stick) or Sinclair (double stick), with a claimed data transfer rate of 128K/second using a single density drive, and access time of one second; the Disciple's most obvious virtue is that it gives Spectrum owners easy access to disc storage. The snapshot facility, printer interface, and joystick ports and networking are big bonuses.

My only reservations about what must be seen as a very desirable purchase are that the pre-production manual and operating system software are pretty primitive—a huge amount of prototyping would be useful—and that both of the review model's switches disintegrated. A bit of superglue needed there, Rockstar.

That apart, I can't think of many Spectrum owners who would not leap at the chance to get their hands on the Disciple.

Chris Jardine

Product Disciple interface Micro
Any Spectrum Price £84.75 Sugg-
lister Rockford, 81 Church Road, Ley-
don MW4 4DP. Tel: 01-303 0181.



The Elite joystick

From traditional sticks . . .

Enomax's latest entries in the joystick stakes cover the range from traditional to totally spaced-out.

Both offer something for first-time buyers and experienced games players looking for that little bit extra performance; and since the sticks feature the standard D-connector they can be used with Commodore, Atari and Amstrad machines, plus Spectrums with a suitable interface.

The more conventional stick is the Elite, which has an unusual body shell shape but is in fact quite straightforward and easy to use. The Elite is made in high impact ABS plastic with a steel shaft.

The Elite also features micro-switches, making for precise directional control. The unusual bulbous shape is very comfortable for their left or right hands, and the two fire buttons—a large one for single shot and a smaller one for autofire—have a positive action.

Bound to arouse those controversies is the amazing Joypad. Though it isn't exactly the same as a joystick, it looks more like the Commodore master plan, with a large spherical controller, a fat dog-leg shaped base and five controls. However, as the Japanese instructions explain, this is "New weapon layered joystick / High technological forum based

The paperless office must wait

There is one simple technological leap that must be accomplished if we're to achieve the paperless office, factory and/or stadium. Now you may think that dispensing with paper is a matter of getting everybody to communicate with the aid of computers and modems - and that's happened so we can just dump all the paper, check!

Well that's not strictly true, firstly because tests in the US have already shown that the current generation of keyboards isn't absorbent enough for the paperless laboratory to become a reality, and secondly because no matter how many of us have the necessary kit there will always be some soul who insists on beating out text with the aid of Bealton Board and John Bull printing set. Now if you've got everything geared to handling digital information, in video and in film, the arrival of paper-based analogue information is decidedly unwelcome.

The point is that the paperless office needs to have an interface to paper if it's to take off - basically, computers need to learn to read.

Now they can do this, but it's a complex and expensive process. Page scanners costing several thousand pounds will read in the patterns of letters, compare these to patterns stored in the computer's memory and assign an ASCII value to the letters provided they're recognised. The expense lies in two areas. The method used to read the data on the page has to be highly accurate, and the software has to be flexible enough to recognise a letter in many different applications as being the same letter. You may be able to read in colour, but getting a computer to do so can be tricky.

The Oberon Omnisreader is a valiant - but it must be said failed - attempt to break through the optical character recognition barrier. It was first launched around two years ago at £400, which is

"The basic concept of the Omnisreader... consists of a flat surface with a ruler attached - place the text to be scanned in a window in the ruler, one line at a time and track the scanner along it."

still staggeringly cheap for this sort of device, but unfortunately the compromises inherent in cutting the price to this level stopped it from establishing itself. Oberon went bust, but the beast is now on the market again, and at £39.99 is going so well that the vendor has just phased me up telling me the price has gone up to £49.99.

The basic concept of the Omnisreader is good. It consists of a flat surface with a ruler attached. Place the text to be scanned in a narrow window in the ruler, one line at a time, and track the scanner along it while holding down the scanner button. The Omnisreader acts as a modem, with baud rates from 300 to 9600, so anything it sends should be receivable with the relevant communications software.

Now the problems. You can only scan one line at a time, and type size and spacing is quite critical, so some text just won't scan. If the device were a bit more expensive it would use stepper motors to take the scanner across the paper at a constant speed, but as it doesn't you need to have a steady hand.

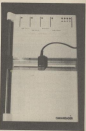
The net result is that you'll only get a completely accurate representation of a line under optimum conditions, and quite often you'll find you have to try a line two or three times before you get it right. You can get the text across into digital form,

but you can find that it's taking you as long - or longer - than it would just to retype it. And once you have got it in you'll probably have to run it through a spelling checker and debug it.

Does it any use? The obvious answer is "did Oberon get back up?" but at £49.99, or £60 - it seems to look like an interesting deal, if not a good one. If you seriously think you can do a useful file transfer job on it go and hold your head in a bucket of ice cold water until you feel better, but if you're interested in the technology and want to experiment it really is excellent value.

John Lutton

Product Oberon Omnisreader Supplier Microsmith, 287-289 Whitechapel Road, London E1



The Joyball - no jobs please

to totally spaced out

upon Game Engineering both the design and colour appeal... this forum can respond to your adventurous spirit! Whichever that means, it's right.

The Joyball has four fire buttons, two of which are normal and two of which are analogue. The analogue sticks can be switched from 7-8 to 10 sticks per second using a slider switch between the ball and the fire buttons.

The increased comfort of the large ball, as opposed to a slim handle, comes into its own, because you need only hold the ball loosely, your hand does not become tired so quickly.

Operating the Joyball takes some get-

ting used to, since it involves learning a whole new set of reactions. However, tried can on a whole range of fast moving arcade games, including Defender and Space Invaders of Amibird, it proved impressively effective with practice. Certainly one to try out if you want to get one up on the neighbours.

Product Digitalball joystick Mouses Commodore, Amstrad, Atari, and Spectrum with suitable interface Price £18.99, £24.95 Supplier Dynamics, Parkdale Lane, Rivington, North Manchester YO10 5XR. Tel 0282 801006.


```

1100 PRINT PRINT "What is your choice ?"
1110
1120 IF =12345678:GOTO 1000
1130 ON 1 GOTO 2000,3000,4000,5000,6000,
7000,8000,9000
2000 REM a PRINT/EDIT 1
2010 PRINT :CLS:PRINT :SA: "ENTER OR EDIT
"SA":SA
2020 PRINT
2030 PRINT "Which record (1-7) do you?"
2040 INPUT "1-7":NCL
2050 IF REC(1) OR REC(2) THEN PRINT "BE
18-0070 1000"
2060 PRINT :CLS:PRINT
2070 PRINT "Enter ":(TAB(10)) "Record":
END:GOTO(1):SA:PRINT
2075 GOTO 1:SA
2080 FOR I=1 TO 7:SA
2090 PRINT :TAB(10) ":(TAB(10))":SA
2100 NEXT I
2110 PRINT PRINT "Enter data, or press 0
"PRINT "to leave effect."
2120 FOR J=1 TO 7:SA
2130 PRINT :TAB(10) "18-0070 1000":J:SA
2140 :TAB(10) "0000 0000"
2150 IF =0 THEN THEN LIST 18-0070
2160 PRINT :TAB(10) "18-0070":SA:PRINT
2170 NEXT J
2180 PRINT 1:SA
2190 PRINT
2200 PRINT "18-0070 enter this record, 18-0
"18 another record or 0 if finish editing"
2210
2220 IF =0:GOTO(1):GOTO(0) 10000
2230 IF 1:10 7000-0070 2000
2240 IF 2:15 7000 0070 2010
2250 GOTO 1000
2260 FOR I=1 TO 7:SA
2270 PRINT :CLS:PRINT "DELETE A RECD
"0":SA
2280 PRINT :CLS:PRINT "Enter which record (1-
)?"
2290 INPUT "1-7":NCL
2300 IF REC(1) OR REC(2) THEN PRINT "BE
18-0070 1000"
2310 PRINT :PRINT
2320 PRINT "Code record":NCL:"to which
"RECORD (1-7)?"
2330 INPUT "1-7":NCL
2340 IF REC(1) OR REC(2) THEN PRINT "BE
18-0070 1000"
2350 PRINT
2360 PRINT "Confirm deletion of re
"cord":NCL:"to delete, 0 to keep?"
2370 IF =0 THEN GOTO 10000
2380 IF 1:10 7000 PRINT:PRINT "Record ":(
)NCL:"RECD" :SA:SA:DELETE:GOTO 1000
2390 FOR I=1 TO 7:SA
2400 LIST 18-0070:SA
2410 NEXT I
2420 PRINT:PRINT "Confirm deletion of re
"cord":NCL:"to delete, 0 to keep?"
2430 IF =0 THEN GOTO 10000
2440 IF 1:10 7000 PRINT :CLS:GOTO 1000
2450 NEXT I:SA
2460 PRINT 1:SA
2470 PRINT
2480 PRINT "Record to be coded (1-7)?"
2490
2500 INPUT "1-7":NCL
2510 IF REC(1) OR REC(2) THEN PRINT "BE
18-0070 1000"
2520 PRINT
2530 PRINT "Code record":NCL:"to which
"RECORD (1-7)?"
2540 INPUT "1-7":NCL
2550 IF REC(1) OR REC(2) THEN PRINT "BE
18-0070 1000"
2560 PRINT
2570 PRINT "Confirm copy":NCL:"to"
2580 "18-0070"
2590 IF =0 THEN GOTO 10000
2600 IF 1:10 7000 PRINT :CLS:GOTO 1000
2610 NEXT I:SA
2620 PRINT 1:SA

```

All Sorts

Mike Lloyd

Sorting routines are an essential feature of many computer programs and a great deal of time and effort is expended developing more efficient sorting algorithms. One of the fastest, the Quicksort, is recursive and therefore cannot properly be implemented on most home computers. Although this is no drawback to the QL it is not particularly popular because the procedure listing is lengthy and recursion is relatively slow and uses large amounts of RAM.

To provide an efficient but non-recursive sorting routine for the QL, I have developed a variation of the ripple sort technique which could easily be converted to most other Basic dialects.

During sorting, most time is wasted shuffling values into and out of the array. Ripple sorts reduce this shuffling by keeping a value in a temporary store until the correct position in the list is found for it. This means that the routine makes only a single pass through the array. My variation helps in finding the correct

place for each value in turn.

The quickest way of finding the correct place for a value within a sorted list is to divide the list in half and test to see which half should hold the target value. That portion of the list is then divided into two and the test repeated until the actual position is found. This is known as a binary search.

The Mikosort takes the first unsorted item in the array as its target value. The array elements before it in the list are those which have been sorted into order and this area of the array is tested using the binary search method to determine where the target value is to be placed. The target value is removed to a temporary variable, thus creating a space in the array. The array elements between the target value's old position and its destination are shuffled down one space. The target value is then moved from the temporary variable into its proper place.

Mikosort works without reliance on arrays of any variable type (integer, string or real number). This will not be possible on other computers and an appropriate variable type will need to be used. Conversion should also take into account the SuperBasic function Dim which returns the number of elements in an array.

Listing 1

```

100 REM Mikosort Example DIM
110 DIM numbers(100)
120 FOR I = 0 TO 99: numbers(I) = INT
(100 * RND)
130 PRINT "Mikosort" : TAB(40) "Mikosort"
140 DIM array(100) : DIM array(100)
150 PRINT "Mikosort" : TAB(40) "Mikosort"
160 PRINT

```

Listing 2

```

100 DIM array(100) : DIM array(100)
110 LOCAL TO 1 : DIM array(100) : DIM
array(100) : DIM array(100)
120 IF array(1) < array(2) THEN
130 array(1) = array(2)
140 array(2) = array(1)
150 GOTO 100
160 FOR I = 1 TO DIM array(100) - 1
170 array(I) = array(I+1)
180 array(I+1) = array(I)
190 NEXT I
200 DIM array(100)
210 array(1) = 10 : array(2) = 5
220 array(3) = 20 : array(4) = 15
230 array(5) = 30 : array(6) = 25
240 array(7) = 40 : array(8) = 35
250 array(9) = 50 : array(10) = 45
260 array(11) = 60 : array(12) = 55
270 array(13) = 70 : array(14) = 65
280 array(15) = 80 : array(16) = 75
290 array(17) = 90 : array(18) = 85
300 array(19) = 100 : array(20) = 95
310 DIM array(100)
320 DIM array(100)
330 DIM array(100)

```


Spreadsheet

D Lister

On with the instructions for this BBC/Electron program.

"F" allows the inputting of formulae. It takes the form of "A4 + 07" (as an example). The procedure will handle any formula using "+, -, /, *". To save typing out things like A1 + A2 + A3 ... + A10 you can use "SA1, A10".

"D" displays the formula contained in the current cell position (if any).

"U" forces an update.

"T" toggles between manual updating and auto updates.

"<" and ">" decrease and increase the page respectively. The function keys go direct to the corresponding page.



"N" names a sheet/file which is used when saving (see the main menu).

"A" toggles between adding new values to old (a flag) and entering new values absolutely.

"B" puts a copy of the current formula into a buffer for use with the option

below.

"Copy" copies the buffer contents to a cell. Row changes and column changes are automatically compensated for.

"Zenter" returns you to the main menu. The program is error trapped and gives you dramatic decisions.

```

1000*10, 0-0+000000
1001*10, 0-0+000000
1002*10, 0-0+000000
1003*10, 0-0+000000
1004*10, 0-0+000000
1005*10, 0-0+000000
1006*10, 0-0+000000
1007*10, 0-0+000000
1008*10, 0-0+000000
1009*10, 0-0+000000
1010*10, 0-0+000000
1011*10, 0-0+000000
1012*10, 0-0+000000
1013*10, 0-0+000000
1014*10, 0-0+000000
1015*10, 0-0+000000
1016*10, 0-0+000000
1017*10, 0-0+000000
1018*10, 0-0+000000
1019*10, 0-0+000000
1020*10, 0-0+000000
1021*10, 0-0+000000
1022*10, 0-0+000000
1023*10, 0-0+000000
1024*10, 0-0+000000
1025*10, 0-0+000000
1026*10, 0-0+000000
1027*10, 0-0+000000
1028*10, 0-0+000000
1029*10, 0-0+000000
1030*10, 0-0+000000
1031*10, 0-0+000000
1032*10, 0-0+000000
1033*10, 0-0+000000
1034*10, 0-0+000000
1035*10, 0-0+000000
1036*10, 0-0+000000
1037*10, 0-0+000000
1038*10, 0-0+000000
1039*10, 0-0+000000
1040*10, 0-0+000000
1041*10, 0-0+000000
1042*10, 0-0+000000
1043*10, 0-0+000000
1044*10, 0-0+000000
1045*10, 0-0+000000
1046*10, 0-0+000000
1047*10, 0-0+000000
1048*10, 0-0+000000
1049*10, 0-0+000000
1050*10, 0-0+000000
1051*10, 0-0+000000
1052*10, 0-0+000000
1053*10, 0-0+000000
1054*10, 0-0+000000
1055*10, 0-0+000000
1056*10, 0-0+000000
1057*10, 0-0+000000
1058*10, 0-0+000000
1059*10, 0-0+000000
1060*10, 0-0+000000
1061*10, 0-0+000000
1062*10, 0-0+000000
1063*10, 0-0+000000
1064*10, 0-0+000000
1065*10, 0-0+000000
1066*10, 0-0+000000
1067*10, 0-0+000000
1068*10, 0-0+000000
1069*10, 0-0+000000
1070*10, 0-0+000000
1071*10, 0-0+000000
1072*10, 0-0+000000
1073*10, 0-0+000000
1074*10, 0-0+000000
1075*10, 0-0+000000
1076*10, 0-0+000000
1077*10, 0-0+000000
1078*10, 0-0+000000
1079*10, 0-0+000000
1080*10, 0-0+000000
1081*10, 0-0+000000
1082*10, 0-0+000000
1083*10, 0-0+000000
1084*10, 0-0+000000
1085*10, 0-0+000000
1086*10, 0-0+000000
1087*10, 0-0+000000
1088*10, 0-0+000000
1089*10, 0-0+000000
1090*10, 0-0+000000
1091*10, 0-0+000000
1092*10, 0-0+000000
1093*10, 0-0+000000
1094*10, 0-0+000000
1095*10, 0-0+000000
1096*10, 0-0+000000
1097*10, 0-0+000000
1098*10, 0-0+000000
1099*10, 0-0+000000
1100*10, 0-0+000000

```


Oberon International OMNI-READER™ £49.99

Including RFT, Postage and packing

The Omni-Reader is a new and easier alternative to typing in data. By using advanced character recognition techniques the Omni-Reader can read printed text and send it to the computer as though the information was coming from a modem.

The vast majority of office correspondence can be read by the Omni-Reader which supports the four major typesizes used. These are Courier 10, Courier 12, Letter Gothic and Postage Slim. To enter a page of text you place it under the special Omni-Reader ruler and read the text with an electronic eye. A small computer within the Omni-Reader then translates those images into standard ASCII text.

Any computer with a standard RS232C port can make use of the Oberon Omni-reader, all you need is some communications software and the cable for your computer.

Cables available for BBC microcomputers, Sinclair Spectrum 128 and Spectrum +2 with machine specific instructions. Only £11.75

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START SOFT (Dept PC1)

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Pine Tree Generator

D C Nevill

This QL procedure prints a pine tree at a given position (x,y) and of a given height (I) on the screen.

The procedure may be used within a loop putting random values into these parameters to produce landscapes of trees. Screens like this may be useful in games or other programs requiring complex graphics.

```
100 DEFine PRocedure Pine(x,y,I)
110 LOCAL b,x,y,l,w,r,f,yf
120 LINE x,y TO x,y+I
130 FOR s = 1 TO I
140   w = y+1+2*(s-1)
150   b = 1+(I-s)/10*(s-1)
160   a = 40+10*(s-1)
170   x = 800*(a)
180   xf = a+800*(a)
190   yf = y-(s-1)*2-800*(a+1)^(2-1.5)
200   LINE x,y TO xf,yf
210   LINE x,y TO x+1*(xf-yf)
220 END FOR s
230 END DEFine Pine
```

Quick Sort

J E Mucklow

This sorting program was written on an Atari ST but will work on other computers with very little modification. The variables are as follows:

A—Outer loop, B—inner loop, C—Array containing numbers to be sorted, L—Upper limit of array, T—Temporary variable and M—Position of top value of array in B loop.

```
10 FOR A = 1 TO L
20 M = A
30 FOR B = A TO L
40 IF C(B) > C(M) THEN M = B
50 NEXT B
60 T = C(M), C(M) = C(A), C(A) = T
70 NEXT A
```

Triumph Adler Dump

D D Nevill

The procedure for the QL allows a screen to be printed on the Triumph-Adler dot-matrix printer operating in graphics mode.

The routine assumes that the printer is connected using a standard serial to parallel Centronics interface operating at 9600 baud.

The programme takes approximately 10 minutes to run.

```
100 REMark *** S C R E E N   D U M P ***
110 REMark *** B. to Triumph Printer ***
120 DEFine PRocedure Dump_Screen
130 LOCAL r,l,j,m,n,t,c,w,b,s,d,a,b,c,d,e,f
140 r=CORNER(2740000/64):l=64^2        *:(1024)
150 FOR r=l TO 1024
160   PRINT #0;CHR(110);
170   FOR c=l TO 127 STEP 1
180     t=CHR(CHR(1))
190     IF w=140
200       PRINT #0;CHR(10);
210       GOTO
220     w=w+1
230     FOR b=7 TO 8 STEP -1
240       PRINT #0;CHR("  "*(107/w+2)*b)
250       IF c<=207:PRINT #0;CHR(" ");
260     END FOR b
270   END FOR c
280 END FOR r
290 END DEFine Dump_Screen
```




With Ken Garrock

Graphic confusion

At Allocation of Babbageville, Nemo, writes:

Q I have been programming my C64 for about six months now, and am still a little confused about the high res graphics modes, particularly, Bit Mapped Multi Colour mode. What I don't understand is where their colours are kept, and how they are represented on the screen. Could you help?

A Bit Mapped Multi Colour mode on the Commodore 64 is about the most common graphics mode used since it allows four different colours to be used per character square. To set it up, choose where you want your VIC RAM bank to be, e.g. 0, 1, 2 or 3 and POKE \$6576 to select it, for example POKE \$6576,3 to select bank 3 starting at 16384. Next, set bitmap mode with POKE \$3286, POKE \$3286 OR 33 and multiplex mode with POKE \$3270, POKE \$3270 OR 16. Position the bitmap, and lower colour map with POKE \$3272, 121, this starts the bitmap at \$8000 (0 denotes hexadecimal notation) and the lower colour map at \$5000.

The screen resolution in this mode is 160x200 with two bits defining one of four colours in the following way:

- 00 Background colour (RAM \$5000)
- 01 1
- 10 16 shades in lower colour RAM (\$5000)
- 11 16 shades in lower colour RAM (\$5000)
- 10 16 shades in lower colour RAM (\$5000)
- 11 16 shades in high colour RAM (\$5000)

Each of the colour RAM contains 1000 bytes each rotate setting the colour of a 64x64 block of pixels in the bitmap depending on the bits as above. The bitmap is set up as follows:

Each byte contains 4 sets of 2 bits so taking the top left most pixel on the screen, the colour is set with \$00000000 where XX can be 00, 01, 10, or 11 each pair relating to a specific colour. The next pixel to the right is set with 00000000, the third with 00000000 and the fourth with 00000000. So, to set the second pixel from the left, in the top row, to the colour specified in \$5296 (black), POKE 34576, 33-3276, i.e. both bits to one. The bitmap itself is set up in the following way:

Row contents	Row contents
0 0000 0000 00 00 00 00 00	0 00 00 00 00 00 00 00
1 0000 0000 00 00 00 00 00	1 00 00 00 00 00 00 00
2 0000 0000 00 00 00 00 00	2 00 00 00 00 00 00 00
3 0000 0000 00 00 00 00 00	3 00 00 00 00 00 00 00
4 0000 0000 00 00 00 00 00	4 00 00 00 00 00 00 00
5 0000 0000 00 00 00 00 00	5 00 00 00 00 00 00 00
6 0000 0000 00 00 00 00 00	6 00 00 00 00 00 00 00
7 0000 0000 00 00 00 00 00	7 00 00 00 00 00 00 00

and store for 40 blocks in 320 bytes and store for 25 lines.

Hence the screen image is made up from 40x25 blocks of eight bytes each, each defining 32 pixels hence 32000 pixels or 160x320. To find the location of a specific byte given its X,Y coordinates use the following formula:

Memory=(INT(Y/8)*320)+(Y-(Y/8)*320)
 *320+(X-(X/32)*320)
 (INT(X)/4)*8

This is the offset from the start of the screen so to get the address in memory, add the bitmap start address \$5000 (24576).

Once the particular byte is found, the bit pair needed to set the colour are found with $(B \& X) \& (4 \& X)$ but remember that these are in reverse order, so if:

$(B \& 0) \& (4 \& 0) = 00$, 00, 10, 10 means 00, 01, 10, 11
 $(B \& 1) \& (4 \& 1) = 01$, 10, 01, 00
 $(B \& 2) \& (4 \& 2) = 01$, 01, 11, 11
 $(B \& 3) \& (4 \& 3) = 01$, 11, 11, 01

To actually plot points, you will need to read the memory location address, AND with 385 (192,4,12 or 3) and then OR with the appropriate bits. The AND is related to zero are bits that might be set in the port.

But that the colours are

limited to 4 per 4x8 square with the background colour being the same all over the screen. So if you POKE 34576,33 (11 10 01 00) and then POKE \$3281,0 POKE 33843,1*16-2 POKE \$6296,3 you should see the colours cyan, red, white and black.

Colourful Commodore

J Action of Blackpool, Lancs, writes:

Q I have a Commodore 1961 colour monitor and I would like to connect it to my video recorder. I have tried connecting the video output to the Lum input and get a black and white picture. How can I get colour, and is the sound input compatible with the video recorder's output?

A The 1961 has separate inputs for colour and brightness, video recorders send out their signal as composite colour and brightness. All you need to do to get colour is connect the video signal to both colour and Lum inputs at once.

The sound input for the monitor is compatible with the HiFi 18D standard so if your video has the same output, and most of them do, then you will be able to connect the sound output directly to the monitor input.

Happy viewing!

Colour blindness

Kath Platt of Birmingham, Cleveland, writes:

Q I own a GPC664 and am trying to connect it to a Ferguson TA 808 TV/Monitor. Although this is easily done with a ready made lead, the full range of colours are unavailable - only 8 out of the 26. Is it possible to connect and get the full range of colours with this monitor, and if so how?

A It sounds as though the cable may be wired up wrongly. The Amstrad

RGB is as far as I know, standard. Check that the Lum pin has been connected, if there is one on the TA, if not then this may be the cause of the trouble.

Alternatively, there are two types of RGB signal, linear and non-linear, it may be that the TA is expecting the opposite to that which the Amstrad puts out if this is the case, there is no way you will get all the colours from the Amstrad onto the TA.

How to do pokes

Cain Robertson of London E2, writes:

Q Can you explain to me how you write "Pokes" for games?

A I presume you mean these pokes, inserting different numbers into the code to get more lives, higher scores, immunity from death and so on.

I've only ever done it for a few games and then, to a certain extent, by trial and error. How it is done depends on the machine and how well the game is protected.

First of all, you really need to look at the code, and work out what it does, write you are doing this, you will generally find that messages such as "You lose sucker" can be located. These can be edited and personalised quite easily, by finding their absolute location in memory when the game is loaded, and then overwriting with the new text. Once the new version is in, run the game by calling $(CALLS,PRINT,END)$ the address of the start of the game.

Altering other sections of the game calls for a little more knowledge of machine code plus a disassembler. Again, depending on the machine, the start address of the game can be found, from the loader on the tape, or by looking at the system load address memory location, after the game has been loaded, but not run. Start disassembling from here and you should find that the setup routines that define things like the number of lives can be found. If you look at where the data for lives is loaded from, you can then alter it so that when the game is run, you live longer.



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ACCESS

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Midi Master for your Atari blaster

Mark Jenkins brings news of a new music package for the Atari and Commodore ranges

It's good to see some of the simpler micros being supported by powerful music software, and the 3-Bit Systems *Midi Master* fits the bill for the Atari 800/800X/130XE micros (with 48k memory). It's a hardware/software package, but the hardware is very simple — a multiplexer plug for the Atari's serial disc drive socket, leading to a pair of Din plugs marked I and O (for Midi In and Out).

And the software comprises two discs (for one tape), one for the operating system and one for examples. Music is played via Midi, so you'll need appropriate synthesizers — the software plays up to eight monophonic tracks, so two Casio CZ 101s in solo mode will fit the bill admirably. We seem to keep returning to the CZ 101s, but for the past 18 months or so it has been by far the most practical way to do Midi synthesis, offering powerful eight-note chords or four different monophonic sounds simultaneously for around £240.

So the software is in effect a self-sufficient real-time eight-track sequencer or composer, but it's also useful for owners of the Atari 800X Computer Cartridge or the disc version of the *Advanced Music System*, since the demo programs included use play tones from these packages over Midi, either polyphonically over a single Midi channel or monophonically on four different channels simultaneously (which neatly covers the two options offered by the CZ 101).

The package also offers two sound editors for the CZ 101 and for the budget Yamaha DX 100, which in some ways sounds more powerful although it doesn't have the four-voice multitrack playing option. These allow you to create new sounds and store them to disc or tape, which is a valuable option since both keyboards rely on single data-entry sliders for editing and neither has a very informative LCD display.

The main music screen of *Midi Master* is divided into a status line at the top showing memory remaining and metronome time, and the status block which has a section for each of the eight tracks. The Metronome gives audible clicks between 0% and 3% apart (you can disable the metronome by setting its speed to zero) and the eight-track sections each have the following parameters:

Rec — enable recording and set Midi channel from one to 16.
Play — enable play and select Midi channel.
Mem — transmit a memory number from zero to 127 over Midi before play commences. You have to take into account that some synths number patches from 00, others from 01, and others from 11 to 88 in banks of eight.
Trp — transpose pitch of track in semitones, plus or minus 99.
Rep — number of repetitions of a track.
Delay — delay lead-in time of a track in 100ths of a second to compensate for delays in long chains of mixed instruments.
Gap — control time interval between repetitions of a track.

The S, L, W, F, R and 7 keys control Save, Load, Wipe (erase a single track), Play, Record (one or more tracks simultaneously with an eight-beat count-in if the metronome is enabled) and Done (delete the notes of any track by tapping out the new rhythm on the key).

As you can imagine, *Midi Master* is very easy to use, but since there are no facilities for advanced composition such as track copying, song editing or step-time entry of complex phrases, it could become limiting. I don't have much idea of the total capacity — but then, my copy of *Midi Master* suddenly refused to load, so don't expect any deeply considered opinions on the thing.

3-Bit itself describes the playback facilities for *Music Composer* and *Advanced Music System* files as having some limitations, mainly due to the fact that a lot of effects on these packages are created by repeating notes and envelopes, which doesn't have the same effect over Midi. Future versions are likely to support velocity recording and to cope with the more tractable *Real Street Music Writer* and *Activision Music Studio* packages.

As for the patch-editing facilities — well obviously there will only be of any interest to you if you already have a CZ 101 (or 1000, 2000, 5000 or 2300, which can only be edited via Midi) or a DX 100 (or 21 or 25). The Cassio version consists of a single table of parameters which are altered using the cursor keys which move an orange block across the screen, and the DX version transfers sounds to the micro and allows you to edit the raw Midi parameter data. A valuable facility though, with CZ storage cartridges being very expensive and the



DX 100 saving only onto being old cassette.

It also has a package called *Permutation Master* at £29.95, and this will allow you to load and play up to nine eight-bit samples through a hi-fi or other amplifier and store them into 32 patterns of between four and 32 beats. It's a three-drum polyphonic, which means that you can have a hi-hat occurring on a beat which is already occupied by a bass and a snare, for instance.

Midi Master is £35.00 by mail from 3-Bit Systems, 44 Maxson Road, Dunstable LU6 4EG.

Existing news from Steinberg, which has completely re-worked its range of computer music products and introduced several new titles and updates.

The *Pro-2V* package (£280) for the Atari 5200/10400ST, which allows you to compose 24 channels of polyphonic Midi information, is now capable of reading the SMPTE code used to synchronise music to films and video. Steinberg has recently introduced a *SMPTE* code generator which converts to the micro's RS232 port — it will be around £90.

Also on the Atari front, a music notation/composer program, and a visual editing package for the Akai 5900 sound sampler, which is becoming very popular (see November/December), prices to be announced. The latter package will include the ability to convert 5900 files to Propriet 2000/2000 files, which is good news for owners of either sampler (assuming they want to patch each other's sounds).

For the Commodors, Steinberg has re-packaged the *Pro-16* composer on a cartridge so you don't have to load the software from disc at the start of each session. *Pro-16S* is £239 and has sync-to-tape and graphic editing capabilities, and *Pro-16 Plus* at £299 also has a scorewriting function.

On disc, the range now includes editors and sound library packages for the budget *Island Alpha Juno 102* (£90 — £85), and for the powerful *King DW8000* (£165 — £160). The basic Commodore-Midi interface is £65, the XT version with sync-to-tape is £165.

Steinberg Research, The Spindleworks Centre, Charlbury, Oxford OX7 3PG. Tel: 0493 811325.



All aboard for Ireland

A new board for Ireland, an ST special, and answers to readers' queries from David Wallin

Lots more letters to answer this week; to start off with, queries about new boards.

The first board is called Dubba, and going by its specifications, it's some sort of super-board. Dubba is the only board I know of that runs in the Republic of Ireland and the sysop (Stephen Kearon) says it is the first.

This, claims Stephen, has attracted a good deal of interest in the board, which has resulted in Miracle Technology donating a V220a V653000 modem (one of the top modems available, and is in the same range as Pico's Series 4).

This sounds like a good deal to get started with, until you hear which computer was donated: a Commodore Amiga, with three 3 1/2 inch drives and hard disc promised soon. The Amiga was donated by the Commodore's World Group in Dublin.

Sounds a good board (it certainly ought to be!), so why not give it a ring on Dublin 885634 (a ring Dubba from within the UK, dial 09011 number?) The hours are 9pm till 8am, Monday to Friday, and 24 hours at the weekend. Speeds of access are just about all the ones I can think of: 300/300, 1200/75, 1200/1200 and 2400/2400 (and it's capable of using like 75/1200 and 600/600 but hardly anyone uses these speeds); come to think of it, who uses 2400/2400 baud. The modems cost a fortune — in excess of £500. The format of the speed (ie, Bell or CCITT, not data protocol) was not stated so CCITT will work, but I think the V653000 is a Bell modem as well, and Bell formats may work. The data protocol (and length, start bits and stop bits) is either BN1 (standard BN) or 751 (Vitelata — Preval and Communitel based), automatically detected on ring ins. Some Vitelata terminal software does not allow any sort of scrolling, and these won't work — if you're not sure about your software, give Dubba a try and find out.

Now for some details on the board called ACS BBS, sponsored by Adas Computer Supplies. It is aimed particu-

"ACS BBS has a competition Sig which donates any money it generates to charity. It is the first board I know of to do this, and it is aimed particularly at ST users"

larly at ST users and this is reflected in particular by free downloads for the ST and an ST programming Sig which contains most of the source codes for the finished programs.

The sysop, Paul Carleton, who runs the board on behalf of Adas Computer Supplies, tells that there are a lot of ST users out there with communications software and hardware who are just waiting for and need a BBS of this sort. It also has a competition Sig which donates any money it generates to charity, and the first board I know of to do this. Personally I think it's a good thing. One thing that may be of interest is the sysop's Telecom Gold mailbox number, which is 721MA080433.

The speeds are V21/V23 (300/300 or 1200/75), with an BN1 protocol (standard BS protocol). It's online from 10pm till 8am, seven days a week. Lastly, the phone number: 01-681 8887. Although I said the board seems to be aimed at ST users, you can log on without an ST if you want.

Next on to a problem. Mike Wessely of Berks, has E-Mailed me telling of his problems concerning using Jerve to access Vitelata systems. He says that Sage Soft's Chi-Chi Club doesn't handle colour text and backgrounds very well, and when the two are encountered on one frame its content is hidden. Try phoning Sage Soft, Mike, and ask its technical staff for help, as you can give them a detailed description of what's happening and they may have some ideas.

If not, secondly you could try a different piece of software: I can recommend Comms from Modern House. The big difference you will notice between Comms's vitelata screens and Chi-Chi's is the Comms's are 40 columns and take up just under half of the screen, whereas Chi-Chi's uses the full screen.

I cannot guarantee that Comms will not have the same problem, but I have never encountered it (either with Comms or Chi-Chi). Contacting Margalis, which wrote Comms, may give you a guarantee or at least some help as to whether or not it will happen. Margalis' address is 105 Foundling Court, Buxton Road, Metcham Street, London SW1N 1AA. I've no phone number for them, I'm afraid.

The next problem is from Bob Macmillan, simply asking for help or advice with the VTX 7-11 package, especially on 300/300 baud, as he appears to have problems. If anyone out there has any possible answers, then phone Prometheus (the board with my communications section) and select number eight from the main menu and leave the answer: it will be put up on the board where Bob can see it. Prometheus is a Vitelata board and the number is 01-300 7177. If you don't have a Vitelata emulator on your software then either E-Mail or snail mail me and I'll make sure Bob sees it. I'll also print any advice on the VTX 7-11 in the magazine as, from what I can make out, others are having problems with the 7-11 package as well.

One quick question, from John — left on Prometheus with no surname. Is 300/300 available on a VTX 5000? Well, I'm not sure, but I've heard people talk about this a lot and I think it is possible to get 300/300 on the VTX 5000 sometime. If anyone out there has done so, or knows how to, please let me know as I think others would also like to know.

Mike Morris wants to know of Amstrad specialty boards. Well, there's Ros PCW for Amstrad PCW 8258 owners, the number for Ros is 0900-788663 at 300/300 baud. There are others, and I'll let you know of them in a week or two, when I've sorted some out.

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John Cook looks through this week's new arrivals

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Micro Atari ST **Supplier** Arco, 35 West Hill, Denford, Kent DA1 2B.



Program *Mind Games Type Simulation Price* £24.95
Micro Atari ST **Supplier** US Gold, Unit 2 and 3, Holford Way, Holford, Birmingham B8 7AX.

Program *Jewels of Darkness Type Adventure Price* £19.95
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Having been consigned to virtually every other format than the Level 9 Rainbow package, *Jewels of Darkness* has now been released for the Atari ST. Unfortunately, despite Rainbow's claims, the graphics in the adventure have not been improved from the versions for eight-bit machines. In fact, they are probably the worst illustrations I can recall on any graphic adventure for the ST.

Still, in the ST market, £30 for three good adventures represents excellent value for money.

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ground almost as long as the microcomputer itself.

But *The Bard* is special. The game universe has been well thought out, lots of magic, character classes, attributes and weapons, lots of graphics and some good sound effects.

There are some highly original touches too. For example, the game is named for the key player in your adventuring party, the bard himself. The bard waxes about by playing and singing magical tunes. But when his throat gets dry, you'll have to run for the nearest tavern and get some ale down him.

There's plenty of exploring

for map-freaks, loads of monsters for adventuring types, and buckets of blood for barbarous hack 'n' slashers.

The only thing to be said against it is that it's completely disc based, so not only do you need a drive, but patience as well, because certain actions involve a fair bit of disc access. But this is a minor quibble. *The Bard* looks destined to be a classic. Watch out for a full review next week.



Program *The Bard's Tale Type Role playing adventure Price* £16.95 disc only
Micro Commodore 64/128 **Supplier** Amuletsoft, Long Acre, London WC2.

Commodore 64/128

Program *Kavali Type Graphic adventure Price* £9.95
Micro Commodore 64 **Supplier** Melbourne House, 60 High Street, Hampton Wick, Kingston Upon Thames, Surrey KT1 4DB.

Program *Back to Reality Type Arcade Price* £1.99
Micro Commodore 64 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Program *1042 Type Arcade/Simulation Price* £3.95 cassette, £14.95 disc
Micro Commodore 64 **Supplier** Elite Systems, Anchor House, Anchor Road, Ashford, Maidstone W22 8PW.

Program *Computer Arts 10 Volume 2 Type Compilation Price* £9.95
Micro Commodore 64/128 **Supplier** Besta Jelle, 29A, Bell Street, Boreham, Surrey.



Program *Captured Type Arcade Adventure Price* £9.95 cassette, £14.95 disc
Micro Commodore 64/128 **Supplier** American Action, Box 10090, 200 43, Sweden.

The Swedes have no great reputation in the software market and looking at *Captured* from American Action of Mainz it's not hard to see why.

Captured is a platform game with over 100 screens to try your patience. It has everything every other platform game has, moving bits, sprites and things and also some smart bombs which clear all the bad blobs off the screen. The graphics are staggeringly original and a beautiful little tune accompanies the whole diabolical affair.

Animation of your sprite is smooth enough but turning around is slow, usually fatally slow. If you're a platform game junkie then here's another one to consider. For me, this program totally failed to capture my interest.



Program ZUG Type: Arcade
Price: £2.99 **Micro:** Commodore 64 **Supplier:** Mastertronic, 8-10 Paul Street, London EC2.

Program World Games Type: Simulation **Price:** £19.99 **Micro:** £14.99 **also:** Micro Commodore 64 **Supplier:** US Gold, Unit 2 and 3, Holford Way, Holford, Birmingham B67 7AX.

Commodore Amiga

Program Jewels of Darkness Type: Adventure **Price:** £19.99 **Micro:** Amiga **Supplier:** Parallax, 14 New Oxford Street, London WC1A 1PS.

IBM PC Compatibles

Program Dambusters Type: Simulation **Price:** £19.99 **Micro:** IBM and compatibles **Supplier:** US Gold, Unit 2 and 3, Holford Way, Holford, Birmingham B67 7AX.

Program Jason Car Type: Simulation **Price:** £19.99 **Micro:** IBM and compatibles **Supplier:** US Gold, Unit 2 and 3, Holford, Birmingham B67 7AX.

Program World Games Type: Simulation **Price:** £24.99 **Micro:** IBM and compatibles **Supplier:** Epyco/US Gold Unit 2 and 3, Holford Way, Holford, Birmingham B67 7AX.

Spectrum

Program ZUG Type: Arcade **Price:** £2.99 **Micro:** Spectrum 48/128 **Supplier:** Mastertronic, 8-10 Paul Street, London EC2.

Program Prehistoric Adventure Type: Text adventure **Price:** £9.99 **Micro:** Spectrum 48K **Supplier:** Crusader Computing, 18 Herby Wood Road, Earley, Reading RG6 2DE.



Straightforward text adventures still find a place in the hearts of many adventures — "The adventures created by text is much more associative than some rather primitive pictures", is the most commonly heard quote from the traditionalists.

Unfortunately "The scope created by text" all too often means sub-Tolkien prose, rather than rich evocative description.

Prehistoric Adventure written by a new company, Crusader Computing, does not fall into this trap; alternative 'old world' screen font, and 'The Bold Adventurer heads westward knowing that he alone can save the Old Man here'.

However, for the text adventure fan it may well be worth a look. Set around Stonehenge, in a world populated by dinosaurs, and other prehistoric animals, your quest is to find and bring back the legendary Anemuth fruit from a distant island in order to bring an elfer to life.

The parser accepts two words per move of a verb-noun format only, which in these days of Infocom and Level 9 scenarios is a bit limiting. Apart from the prehistoric animals, I doubt there's anything remarkably novel about the adventure, but I suspect it'll have your brain working in overdrive if you get into it.

Oh yes, and there's a free glossy wall chart depicting various Stone Age animals — clear a space on your bedroom wall now!

Program Jewels of Darkness Type: Fantasy (adventure) **Price:** £7.99 **Micro:** Spectrum 48K, with expanded 128K version **Supplier:** CCS, 14 Langton Way, London SW3 7TL.

Don't all about it once if I'm wrong, but I think that this is the first strategic computer game with a fantasy scenario. You control a unit of the Imperial guards, sent out to quell an invasion of monsters. After selecting your team from the various wizards and warriors available, you proceed to battle, using either joystick or keyboard to position your forces.

There are two versions of the game on the cassette; the 128K version contains three scenarios rather than one, and has a larger playing area.

The map graphics are clear and colourful, and the strategy involved in reassembling your wizards and warriors to defeat the enemy is considerable. Movement points, weapons ranges, and all the usual paraphernalia of strategy games are included.

Jewels of Darkness deserves a look by fantasy fans and strategists alike; more though that there is no two player option; the little demon living in your computer is the only opponent available.

Charts

Top Twenty

- 1 (21) Infinitor
- 2 (13) 1942
- 3 (7) Pit 2
- 4 (8) Trivial Pursuit
- 5 (3) Paperboy
- 6 (8) Ninja Master
- 7 (19) Computer Hits Vol 2
- 8 (12) Lightforce
- 9 (4) Druid
- 10 (8) Thrust
- 11 (8) Ghosts and Goblins
- 12 (7) Dragon's Lair
- 13 (11) Otis and Lisa
- 14 6-9 The Great Escape
- 15 (16) Don Dare
- 16 8-9 Wishware
- 17 5-9 Gandy
- 18 5-9 1980
- 19 (18) Go for Gold
- 20 6-9 Hapless Days

Mindscape/US Gold

Elite

Melbourne House

Soremark

Elite

Probed

Sam Jolly

Faster Than Light

Probed

Probed

Elite

Software Projects

Probed

Ocean

Virgin

Probed

Electric Dreams

Mastertronic

American

Probed

All figures compiled by Gallup/Microscope

A musical carthorse

I remember when I first acquired a home computer, and would continually sound off about its talents and skills to all available friends and relations. My sister-in-law asked, "But could it do the *Quæstion crossworder*"? (She can, you see, with devastating speed, so I use this as a benchmark of smartness.)

I pondered for a while and said, "I think it would do anagrams." In fact this became my first real programming project (and one I recommend to computer novices). I struggled with problems of string-shifting and permutation for a good while before I came up with some elegant Basic that managed to print all the possible anagrams of a given word.

Even as I congratulated myself, though, I realized that the program would be little use to a crossword-solver. Input a three-letter word, and the six possible variations would come stantly on-screen. Input four letters, and the 24 permutations would print up next efficiently. But neatly whose 83 much exceeds their size—size has great trouble with four-letter anagrams.

A five-letter word puts you to the bother of sorting through 120 possible anagrams, and six letters (when anagrams are only beginning to become tricky) produce 720 permutations. Seven letters multiply those

possibilities by seven — to 5040. And should you be seeking a musical version of "anagrams", you'd find the elegant answer "anagrams" hidden among 362,880 combinations that those nine letters could transform to.

My sister-in-law could finish off several whole puzzles (including a couple of alphabetical jigsaws) before any human could read through all that monstrosity. So perhaps we should make the computer read it, matching each permutation against a dictionary until it finds one that makes English sense. Maybe, but that sort of terrific solution seems very clumsy.

The reason for that is it's immensely not the way that human anagram solvers work. I presented some twelve-year-olds with "Did Meel enter" and one took only three minutes to find the answer ("Clint Eastwood", of course). His mind certainly hadn't toiled methodically through the six thousand million (possibly) possible combinations of those 12 letters.

How he did it is probably a mystery to him. Most of us find that at one moment the letters seem intractable, the next the answer is obvious. Possible syllables shift about in our minds, as we use our sense of the way words work and instinctively ignore most of the non-starters ("Jawbreaker", "Jawbreaker", "Jaw-

breaker" . . .) that my simple-minded computer program wastes so much time on.

Douglas R Hofstadter (the *Gods' Finger*, *Back* author who has said thought about Artificial Intelligence using in many interesting and unexpected directions) has written: "The anagrams problem is one that exemplifies repudiations of thought that all people have not explored.

"How do these letters swirl among one another, fluidly and inventively making and breaking alliances? Glimmering together, then coming apart, almost like little biological objects in a cell . . . It is obviously more related to creativity and spontaneity than it is to logical derivations, but that does not make it — or the mode of thinking that it represents — any less worthy of attention."

A program that could embody one's sense of English word-structures, that could find likely syllables and try to tack them on to others, could discriminate between promising and unpromising combinations of letters, could learn from a central syllable to a sense of the entire word, and above all could recognize a satisfying solution when it found one — that would be a real step towards Artificial Intelligence. I wonder how it'd compare with my sister-in-law?

George Simmons

NEXT WEEK

SPECIAL SUPPLEMENT

Buyers guide to peripherals

Over the next three weeks *Playour* will be publishing comprehensive guides to the best buys in peripherals, drives and software.

By the end of the series, your Christmas list (yes, it's nearly that time of year again) should be complete, and you can rest secure in the knowledge that there will be no excuses for getting off presents this time.

Next week it's peripherals. All you ever wanted to know about the choice of printers, mice, monitors, and modems in the market, the best and brightest value for money add-ons we could find.

Hardware

The Acorn Master Compact — the latest in Acorn's series based on the BBC II.

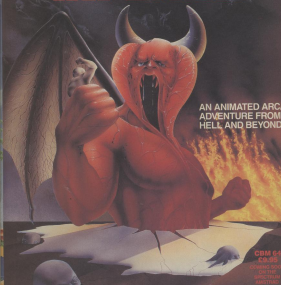
Chess

More news from the world of computers and chess from *Chessbase* author Martin Bryant.

Hackers



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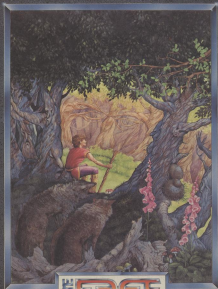
BEYOND

DAKTE'S INFERNO IS AVAILABLE FROM ALL GOOD SOFTWARE
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**DENTON
DESIGNS**

Fairlight

Chronicles of the Land of Fairlight
2. Trail of Darkness



THE EDGE

The Epic continues...

Fairlight 1: *The Light Revealed* occupied virtually every page of last year. Now in this second part of the epic *Chronicles* (followers of the Jorgensen's manuscript will not be disappointed), *Trail of Darkness* is probably the best from 1986. Spectrums game (available for MS-DOS, Spectrum), and features more than a year of development and improvement to the original story. (111108) (border) read now.